

OCTOBER, 1961

ANNIVERSARY ISSUE

"AR"



28



YEARS OF SERVICE TO THE AMATEUR

1933-1961

PRICE 2/-

"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

5A MELVILLE STREET, HAWTHORN, VICTORIA

North Balwyn Tram Passes Corner.

Money Orders and Postal Notes payable North Hawthorn P.O. Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

SCR522 TRANSCEIVERS

Clean condition. Complete with valves. 5/- handling charge ... £5
Modified Units, complete with 832s. Few only left at ... £7½
Receivers only, incomplete, but ideal for wrecking. To clear ... 19/6

NEW TAPE DECKS

"Collaro" Studio Type, Model BM-2.
Three Speed. Price £31/8/-.
Collaro "Studio" Stereo Tape Decks.
Price £37/5/-.

VARIABLE CONDENSERS

(Ceramic)

Small screwdriver adjust, 80 pF., 7/6 each, or three for £1.
Split stator two gang, 80 pF. per sec., medium size, 15/- ea.

Trimmers, Ducon, 4-30 pF., 3/6 ea.
Philips air trimmers, 30-300 pF., 3/- ea.
Compression trimmers, c.t. 3-55 1/2 ea.

TECH MULTIMETER

300 µA. movement.
AC and DC voltages:
0-100, 0-50, 0-250, 0-500,
0-1000, 0-5000.
Current ranges (mA.)
0-1, 0-100, 0-5000 mA.
Ohms range: 0-100,000 ohms.
Size: 3½ x 2½ x 1½ inches.
Complete with leads.
Price only £2/17/6, post paid.

CO-AXIAL CABLE

100 ohm co-ax. cable, ½" diam., 2/- yd.
98 ohm co-ax. cable, ½" diam., in 100 yard rolls £5, or 1/3 yard.
72 ohm PT29M, single strand, ½" diam.
2/- yd.
50 ohm co-ax. cable, ½" diam., 2/- yard

CONDENSERS

Supersil Paper Type:
0.005 µF. 600v. 0.0033 µF. 600v.
0.022 µF. 600v. 0.04 µF. 200v.
0.047 µF. 1000v. 0.015 µF. 400v.
0.0047 µF. 400v. 0.001 µF. 1000v.

Metalpax Electrolytic Type:

25 µF. 25v.d.c.w. 2 µF. 150v.d.c.w.
2 µF. 200v.d.c.w. 2 µF. 250v.d.c.w.
and others.

All 6d. each

FERROCART VACUUM TUBE VOLTMETER

V.T.V.M. £19/17/6 inc. tax
H.V. Probe £3/5/0 inc. tax
R.F. Probe £2/10/0 inc. tax

VALVES

1A3	2/-	7A8	2/- 11a £1
1AT7	7/6	7B8	7/6
1C7	3/-	7B5	5/- 5a £1
1DS5	5/-	7C7	2/- 12 £1
1DB	7/6	7W7	2/6 10a £1
1H5	5/-	7E6	3/6 7a £1
1H6	5/-	12A6	4/- 6a £1
1K4	5/-	12AATG	10/-
1K5	5/-	12AH7	5/- 5a £1
1K7	5/-	12AT7	7/6 3a £1
1N5	5/-	12C8	5/-
1PS	2/-	12JS	5/- 5a £1
1Q5	5/-	12K8	5/- 5a £1
1SS	10/-	12SF7	5/- 5a £1
2X2	5/-	12SG7	5/- 5a £1
3A4	10/-	12SK7	5/- 5a £1
3AP1	35/-	13SL7	7/6 3a £1
3BP1	45/-	12SR7	5/- 5a £1
3Q5	5/-	14A7	3/6 7a £1
5RAY	E1	25L6	5/-
5Y3GT	13/9	117Z6	5/- 5a £1
5Z5	17/6	1625	5/- 5a £1
6A3	7/6	30	1/3
6A7	10/-	35T	30/-
6A5J	7/6	717A	7/6
6AG7	12/6	807	7/6 3a £1
6AM5	(EL91) 10/-	808	£1
6AM6	(EF91) 10/-	815	15/-
6B4	10/-	830B	15/-
6B7	10/-	832A	19/6
6BE6	12/6	954	5/- 5a £1
6C4	5/-	955	5/- 5a £1
6C5	5/-	956	5/- 5a £1
6C6	5/-	958A	2/6 10a £1
6D6	5/-	9003	7/6 3a £1
6E5	5/-	AV11	2/11
6G6	7/6	EA50	2/- 10a £1
6G8G	17/6	EF36	5/- 5a £1
6J6	10/-	EF39	5/- 5a £1
6K7	5/-	QE04/10 15/-	
6KG8	28/6	QV04/7 15/-	
6L7	5/-	RL18	7/6 3a £1
6R7	7/6	UL41	7/6 3a £1
6T7	7/6	VR53	5/- 5a £1
6Z7	7/6	VR101	5/- 5a £1
6SC7	7/6	VR102	5/- 5a £1
6SF5	7/6	VR103	5/- 5a £1
6SF7	7/6	VR136	2/- 12a £1
6SG7	12/6	VR150	12/6
6SH7	4/-	VT52	5/-
6SK7GT	12/6	VT127	4/11 5a £1
6SQ7	12/6	VT501	7/6 3a £1
6SS7	7/6		
6X5	10/-		

NEW VALVES—Just Arrived

IR5	16/4	6BX6	15/1
3V4	15/5	6BZ6	15/2
6AES8	17/3	6CW7	16/9
6AL5	13/7	6K7 met.	5/- 5 £1
6ANT	17/3	6N8	15/5
6AU6	15/1	6SL7	12/6
6AV6	13/-	6SN7	12/6
6BE6	15/2	6V4	11/4
6BL8	16/6	6Y6	5/- 5a £1
6BM8	17/8	805	£3

OVAL SPEAKERS

Oval Type, Well Known Make.
69H 6" x 9" 3.5 ohm voice coil, 37/6
75H 5" x 7" 3.5 ohm voice coil 32/6
5000 and 7000 ohm Tramies to suit, 15/-

BC433-G COMPASS RECEIVERS

Freq. range 200 Kc. to 1750 Kc., 14 values—6J3 volt series, 6K7, 6J5, etc.
I.F. freq. 1425 Kc. Clean operation.
Priced only £10/6/0

Flexible cable & control box 30/- extra.

JAPANESE METERS

0-1 mA., 1½" square, KM-17 £2
0-1 mA., 3½" round, MR-65 £1/15/-

PIEZOE CRYSTAL MICROPHONE

Price only
57/6

Stand to suit
15/- extra

Model BM4 (illustrated). Response 100 to 8000 c.p.s. fitted with 8 ft. cable and phone jack with on-off switch. Can be used on stand for hand use.

LEADER LSG10 SIGNAL GEN.

Freq. range (8 bands): 120 Kc. to 139 Mc. on fundamentals, 120-260 Mc. on harmonics. R.F. output: over 100,000 microvolts. Mod. freq. approx. 400 c.p.s. H.F. output: 2 to 3v. A.F. output: approx. 4v. Tubes: 12BH7, 6AR5. Power supply: a.c. 50/60 500v. 115 or 220v. Size and weight: 6½" x 10" x 4½" 6 lb.

Price £13/17/6 inc. tax.

COMMUNICATOR TRANSMITTERS

3-4 Mc. range £7
4-5.3 Mc. " £5
7-9 Mc. " £6

OA79 and OA81 DIODES

Well known make. Brand New.
To Clear—2/6 each

FILAMENT TRANSFORMERS

2.5 volts c.t. 10 amp.; 12 volts 3 amp.
New. "S" Power Supply type. £3/0/0.

POWER TRANSFORMERS

410 volts aside, 80 mA., 12.8v. at 1.25a.
5v. at 2a. 40/-.

STEP-DOWN TRANSFORMERS

230 volts to 110 volts, 1kv., £8/10/0.
230 volts to 110 volts, 500w., £6/10/0.
In case.

5.5 Mc. VIDEO COILS

Contains slug-tuned coil former.
6d. each.

All parcels sent ordinary post unless otherwise stated.

Editorial



THE TOP FIFTEEN

OUR American contemporaries have been blessed or plagued, depending on how one looks at it, with large increases in their Amateur population over the years and consequently are finding their spectrum space becoming more crowded. There has also been a gradual exodus from c.w. to phone, particularly in view of the relatively new s.s.b. type of emission.

In order to partially solve the problem on 20 metres, the F.C.C. in America, on the 10th March, 1960, expanded the phone band from 14.2-14.3 Mc. to 14.2-14.35 Mc. Before the change, U.S. Amateurs used the low end of the band for a.m. contacts with Canadian and DX stations, and the upper portion of the band for s.s.b. contacts with DX using 14.3-14.35 Mc.

The pressure on the F.C.C. for additional phone space on this band has gradually increased since 1946 and was implemented last year to the new frequencies mentioned previously. This decision was not taken lightly but only after very careful consideration of all the factors involved, including the international effects of such an increase. However, the primary concern of the F.C.C. was for their own domestic situation and this eventually decided the position.

We in Australia are fortunate that the P.M.G.'s Department has left the internal working of our allocated bands to the judgment of the Amateur himself in how he uses them. We have endeavoured to accommodate operators using various types of emissions by gentlemen's agreements and generally this has proved satisfactory.

The A.R.R.L. has now seen fit itself to adopt similar means with their new phone allocations on 20 metres to assist and encourage DX s.s.b. stations. Their proposal is that DX s.s.b. stations should operate between 14335 and 14350 Kc. and only work U.S. stations on 14335 Kc. or below. When one realises the pressure in the U.S.A. for greater phone frequencies, this is a most generous gesture on their part.

This proposal will only work if you—the Australian s.s.b. operator—makes it work. No self disciplinary scheme will ever be 100%, but if you observe the following three points, you will contribute towards a habitable band as opposed, as an alternative, to a ruthless jungle of QRM.

The three rules for VK s.s.b. operators are:—

1. USE the top 15 Kc. of 20 metres regularly.
2. WHEN calling CQ announce you will only listen for Ws and Ks on some frequency below 14335 Kc.
3. DO NOT work any W or K station on the top 15 Kc.

W.L.A. FEDERAL EXECUTIVE.

THE CONTENTS

D.C. Power Converter for Mobile ..	3	W.I.A. DXCC Membership	19	Book Review:	
The Antennamatch—Part Two	4	Hints and Kinks:		Silicon Rectifier Handbook	15
A Reference Shift Modulator for		Painless Mounting of the Mobile		Electronic Tips and Timesavers	15
Mobiles	7	Antenna	8	Correspondence	16
The Franklin Oscillator	9	An Aid For Your Beam	8	DX	21
VHF—The Present State of the Art ..	8	Trade Review:		Notes	23
National Field Day 1961—A VK6		New B. & K. Model 1076 Television		Prediction Chart, October 1961	22
Effort	11	Analyst	15	Sideband	21
Amateurs Take Part in Project		Viceroy S.B. Transmitter	15	SWL	20
Phoenix	13	Glass Zeners in 400 mW. Ratings ..	15	VHF	19

Mullard Alloy Diffusion Technique

High frequency transistors for cordless radio receivers

One of the most important recent advances in transistor technology is the alloy-diffusion technique used by Mullard. This technique provides transistors with uniform high frequency characteristics and enables the design of low cost cordless radios of superior performance.

OC169 - OC170 - OC171

Transistor Type	OC169	OC170	OC171
Collector Voltage (Vcb max.)	-20	-20	-20 V
Collector Current (Ic max.)	10	10	10 mA
Max. Dissipation (25°C)	80	80	80 mW
Typical parameters at (measured at Vce = -6V, Ic = 1mA)	0.45 10 { common } 10 { emitter }	10 100 { common } 100 { base }	100 Mc/s
Input Conductance	0.4	2.5	23 mµhos
Input Capacitance	80	65	~6 pF
Feedback Admittance	< 100	100	600 µµhos
Transfer Admittance	36	32	14 mA/V
Output Conductance	7	60	350 µµhos
Output Capacitance	7	4.5	2.6 pF
Ideal Unilateralised power gain	61	32	< 10dB



Mullard



MULLARD AUSTRALIA PTY. LTD.

Head Office: 35-43 Clarence St., Sydney, N.S.W. 2006
123-129 Victoria Pde., Collingwood, N.S. Vic. 41 6644
ASSOCIATED WITH MULLARD LIMITED LONDON

D.C. POWER CONVERTER FOR MOBILE

A. L. WEST,* VK5LA

THIS article describes a transistorised d.c. power converter suitable for operating portable or mobile gear from a 12 volt battery supply. It uses a pair of OC28 or OC35 transistors with a saturating core transformer and can deliver a d.c. output power of 70 watts with an efficiency of 82%. At 12.5 volts input this represents a battery drain of 6.8 amps., which compares more than favourably with an equivalent disposals genemotor drag of about 11 or 12 amps. In addition, the transistor device has no astronomical starting current and is only a small fraction of the weight and size of the genemotor.

Most transistor power converters intended to furnish a d.c. output may be classified into two main groups; those which use one transformer and those which use two. The former is the more common and has the great advantages of cheapness and simplicity, while the latter, which incorporates a low powered driver stage, is used where large powers are to be converted or where frequency stability with load variation is desired. The converter described herein uses one transformer only and two power transistors in a common collector push-pull switching circuit.

Of the three basic configurations possible, the common-collector circuit was chosen for two main reasons. Firstly, the transistor base current adds usefully to the primary input, and secondly because the two transistors may be mounted together on a common plate without the need for insulating washers. Because the switching waveform is square, the peak current per transistor is equal to the total average input current from the supply, and the figure of 6.8 amps. mentioned above is clearly beyond the capabilities of transistors of the OC16, 2N301 size. Now available are OC28s and OC35s which, with collector and emitter ratings of 6 and 7.2 amps. respectively, are ideal for the purpose. They are also comparatively cheap. The main difference between them is voltage rating which is not very important in this case, so either will do.

For the transformer there are two possibilities. One is to use a ferrite core and a switching frequency of a few kilocycles; the other is to use an iron core operating at a few hundred cycles. The latter course was chosen as it appears that suitable ferrite cores of adequate volt-ampere rating are not readily available here.

A manufacturer's catalogue was consulted and it was decided to use two C-core loops of 0.004" grain oriented silicon iron strip type HWR 10/8. These have a saturated flux density of 17,000 gauss and an effective cross-sectional area of 0.93 square metres for each complete loop.

In designing transformers, the following relation may be used:

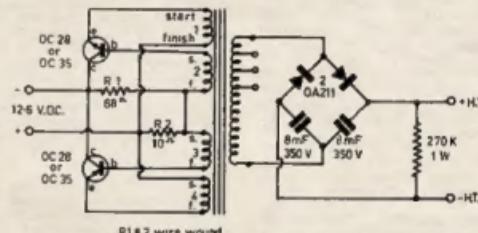
• The writer explains in clear, concise fashion exactly how to make your own transistorised power supply. Must reading for all mobileers.

Volts per turn = $4 k B A f \times 10^{-8}$
where k = form factor of wave = 1
for square waves.

B = flux density used (in gauss)
(17,000).
 A = total effective core area (in
sq. cm.) (2 x 0.93).
 f = frequency of operation
(cycles per second) (400).

If 400 c/s. is chosen as the operating frequency one arrives at the figure of 2 turns per volt.

Assuming a battery supply voltage of 12.5 and allowing 1 volt total for transistor knee voltage and transformer resistance drop, the effective primary voltage becomes 11.5. At 2 turns per volt the primary should have 2×11.5 or 23 turns.



Now for the feedback winding. To maintain a collector current of 6 amps. a base to emitter voltage of up to 1.4 may be required, depending on the individual transistor characteristics. Doubling this to allow a safe margin, it is found that the feedback winding should deliver about 14.3 volts when the primary is energised with 11.5. Thus the number of feedback turns should be about 1.25 times the number of primary turns. Say 29 turns.

The secondary winding will depend on the user's specific requirements and on what type of rectifier system is employed. It is recommended that where possible a full wave voltage doubling circuit be used. This has the advantage of requiring only half as many secondary turns (and silicon diodes) as a bridge system and represents a significant saving in transformer insulation and manual labour requirements. Half wave circuits are unsuitable as they load the transformer unequally on alternate half cycles and result in poor efficiency and uneven load sharing by the two transistors. Because of the square voltage waveform at the secondary, the d.c. output voltage is

an integral multiple of it and if one uses a doubler circuit and 2 turns per volt, then the required number of secondary turns is equal to the desired d.c. output voltage. It is perhaps a good idea to provide a number of taps to allow for different requirements which may arise.

A topic which should be mentioned is overshoot of the switching waveform which increases unnecessarily the all-round voltage stresses and may lead to breakdown. It is greatest at no load and especially with cores which have a poor ratio of permeability to reluctance (e.g. t.v. type ferrite U-cores). The best type of core from this viewpoint is the toroid, but these are rather difficult to wind. With the transformer described overshoot does not present a problem, being 15% at no load and 10% at full load. Bifilar winding techniques are not considered justified in this particular instance.

A word or two about component ratings. With the full wave voltage doubler and square waves the peak inverse voltage experienced by the diodes is twice the transformer voltage, or the

same as the d.c. output voltage. Silicon diodes OA210 are suitable for outputs of 300 volts or so, while for higher voltages up to about 600, OA211s should be used. These figures are somewhat conservative and allow for no-load operation and abnormal battery voltages. Clearly the condenser voltage is half the output voltage.

Some forward bias is necessary to start the device and to maintain correct operation at full load. If it is found that the output voltage falls off and transistor dissipation increases rapidly before the rated power output is achieved, then resistor R1 should be lowered in value to correct the condition. The optimum value may depend somewhat on the individual transistors, and whether or not operation at full load is required.

Incidentally, the supply is self-protecting in that if short-circuited, oscillation ceases, or drops to a low frequency, the input current falling to a non-destructive value.

When operating correctly the transistor dissipation is low and only a small heat sink is required, while the

(Continued on Page 12)

THE ANTENNAMATCH*

Part 2—Construction and Use

F. HICKS-ARNOLD (G6MB)

FOR Amateur use, the original circuit devised by Virgil True has been considerably simplified and is now as shown in Fig. 4, an inspection of which reveals that the complete unit is divided into three screened sections, each being further sub-divided so that all r.f. components actually in series with the transmission line are screened from those components which carry d.c. only. The mechanical layout and construction can be seen in the accompanying photograph.

THE IMPEDANCE DETECTOR COMPONENTS

C2 in the impedance detector section is made up of a 500 pF. ceramic feed-through type condenser with 250 pF. in parallel, making a total of 750 pF. This provides better by-passing and filtering out of r.f. from the line to D2 whilst performing its original function as part of the capacity divider C1-C2.

The 1 ohm resistor R1 is made up of ten 10 ohm one watt composition resistors in parallel mounted on the outside of a paxolin tube 1" in diameter and 1½" long. The 300 pF. crystal condenser (C13) and D1 (CG6E) crystal associated with R1 are mounted inside the paxolin tube with the connection to R2 brought out at right angles to the axis of the tube. The complete assembly is mounted directly between the co-axial input socket CS1 and the end of the rod forming L1 (see the description of the Phase Angle Detector). RFC1 is a standard 2.5 mH. receiving type r.f. choke directly connected between one end of R1 and earth. It provides the d.c. return path from R1, thus completing the bridge circuit.

The galvanometer M1 can be mounted remote from the impedance bridge as it only carries d.c.; it is decoupled by RFC2, C6 and C7. C4 and C9 are of the ceramic feed-through type, serving both as decoupling condensers and as feed-through connections.

All components other than R1, R2, C4, D1 and RFC1 are mounted above the screened compartment.

THE PHASE ANGLE DETECTOR COMPONENTS

Inductances L1 and L2 are, in fact, two brass rods. L1 consists of a 4" rod 5½" long, suspended between feed-through insulators or bushes at opposite ends of the screening box. The diameter of the rod is not critical, although its size will affect the capacity coupling between L1 and L2. The sampling loop L2 is another brass rod 1" in diameter bent into a "U" shape, with legs 2½" long and a centre portion 4" long, which is mounted with the two vertical legs through feed-through insulators in the upper side of the screening box. The horizontal portion is placed above and parallel to L1 to provide inductive coupling to the latter. Spacing between the inductances is approximately 1/16".

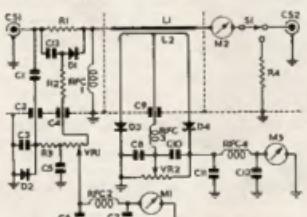
General considerations underlying aerial matching and the design and use of The Antennamatch were described by the author in Part 1 of this article which was published in the September issue of this journal.

The legs of L2 are threaded where they pass through the chassis feed-through insulators and are held in position by nuts above and below the insulators. By adjusting the position of the nuts, the coupling between L1 and L2 can be varied as necessary. The centre tap connection to L2 is passed through the upper side of the screening box by means of the 500 pF. feed-through condenser C9.

A rather simpler method of constructing L1 and L2 is to use a 6" length of co-axial cable, terminating the outer copper screening about an inch from each end, with the inner polythene insulation extending slightly beyond the outer screen. Connections are then made to the centre conductor, which acts as L1 and is connected directly into the line (as in the case of the 4" diameter brass rod used in the first method of construction). The outer screening becomes L2. Such construction has all the essentials of the original, i.e. a length of line forming L1 closely coupled to a centre tapped loop L2. Whilst it is not possible to adjust the coupling, the arrangement works well and is certainly far simpler to make.

All other components, including the diodes D3 and D4, are mounted outside the inductance screening box. As they carry d.c. only, their exact arrangement is not critical but a symmetrical layout is desirable.

CG6E crystal rectifiers were selected for use in the phase angle detector because their high value of back-



ARTIFICIAL LOAD

The artificial load must, as far as possible, have only a resistive element capable of dissipating at least 100 watts. The type 701 heavy duty resistors made by the Morgan Crucible Co. Ltd. are suitable for such use in high frequency circuits as they are non-inductive and have a high surge capacity. These resistors are rated at 90 watts for a rise of 200°C. for continuous loading and can be obtained in exact values from 20 to 2,000 ohms direct from the makers for about 20/- each. However, supplies have been, and are believed still to be, available on the surplus market for a value of 80 ohms—nearly equal to the required 75 ohms to be satisfactory in The Antennamatch.

Such resistors are a homogeneous mixture of conductors and ceramic bonds and are of their stated resistance at full dissipation rating only. The resistance cd^2 is somewhat different from the "hot" value; this point should be borne in mind if any attempt is made to check the values of those obtainable as surplus.

The resistor used in The Antennamatch described in this article is mounted externally to the screening box and between it and the front panel. One end is earthed directly to the box by means of a spring supporting clip, the other end being insulated and connected to the serial loading switch.

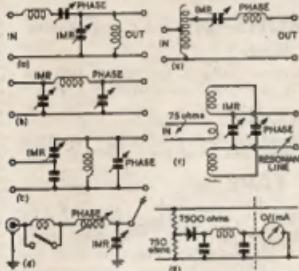


Fig. 5.—Aerial matching networks for independent variation of impedance and phase-angle. (a) Centilever network. (b) Pi-network. (c) Capacitance division. (d) Low-high match. (e) Ratio transmitter. (f) and (g) R.F. box for high impedance tuned lines. (g) Simple r.f. voltmeter. The crystal diode should be a type CGEE, the two condensers 1,000 pF., and the R.F.C. 1.5 mH.

INDICATING METERS

Whilst any form of centre zero reading meter of about 100 μA . full-scale deflection may be used, there are available on the surplus market very suitable meters in the form of the "Left" and "Right" indicators used with R1155 receivers. These meters have a full-scale deflection of around 45 μA . when all internal shunts have been removed.

The type to be preferred is designated Ref. No. 10Q/2—this has two complete movements with two magnets and balance adjustments on both ends of the moving coil pivots. The built-in series and parallel shunts should be removed and connections from the moving coils made direct to the terminals on the back of the case.

Centre marks should be made on each scale with white ink or paint before

adjusting the pointers to these marks by means of the external zero adjusting screws. When this has been done, the complete movements should be withdrawn from the case and the back hair spring tensions adjusted to balance the pressure exerted on the pointer by the adjustment to the front springs. By repeated adjustments to front and back springs, balance should finally be arrived at such that the pointers remain at the centre scale marks with the meter placed in any position.

No attempt should be made to adjust the front springs with the movement removed from the case, as difficulty may be experienced in locating the zero adjusting screws in reassembly if this is done.

THE SCREENING BOX

The Antennamatch shown in the accompanying photograph is contained in a screening box of 12" overall length, internal screening being provided to form three compartments of 3", 6" and 3" in length, 3" in width and 4" in height. A further compartment extends along the full length of 12" and is approximately 2" in height. The construction can be clearly seen in the illustration and forms a complete and compact unit. The dimensions are not critical but are given as a guide to constructors. The box may be made of 18 s.w.g. aluminium or tinned mild steel.

As can be seen, the unit is mounted on the back of a standard rack panel using stand-off pillars to allow the type 701 dummy load resistor to be held between the panel and screening box. Co-axial connectors are fixed on each end of the box. For ease of component assembly and wiring, the top and back should be covered by removable plates.

USING THE ANTENNA-MATCH

Some form of aerial matching unit in which it is possible to vary both the load impedance and the reactance thrown back is essential in order to gain the maximum benefit from all the information provided by The Antennamatch. Various suitable networks which enable both these conditions to be varied are shown in Fig. 5. The circuits

are suitable for both single ended and twin line feeders. All have been used by the writer with success, but particular attention is drawn to network F, which is very suitable for use with all forms of centre fed aerials normally fed with tuned lines. It permits accurate matching with wide variations of feeder lengths and impedances.

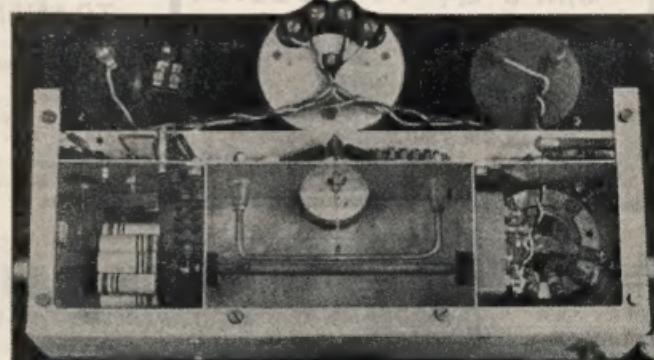
The split coil should be wound on a suitable former with the two halves approximately $\frac{1}{2}$ " apart. The inner ends are taken to the feeders and are across the condenser marked "impedance". This should have a maximum capacity of approximately 250 pF in order to cover wide variations of impedance and should have a plate to plate spacing great enough to prevent r.f. arc-over at maximum power and voltage. The condenser marked "phase" connected across the outer ends of the split coil, should be of approximately 150 pF maximum capacity and of sufficient spacing to prevent r.f. arc-over.

Between the two halves of the split coil and on the same former is wound the link coil which is connected to the transmitter by 75 ohm co-axial cable. The Antennamatch should be placed in series with this feeder. For all bands above 3.5 Mc. a one turn link should be sufficient but two turns may be necessary on 3.5 Mc. to give correct impedance and loading at zero reactance. Separate coils should be used for each band; their inductance must be such that it will resonate at the frequency in use with the feeders and aerial connected.

In operation the transmitter should be tuned up with the output switched to the artificial load with the p.a. loaded to the design figure. Both centre zero meters should be correctly zeroed, after which the output can be switched to the aerial proper.

Simultaneous adjustment must then be made to both the impedance and phasing controls until a point is reached where the aerial becomes resonant and takes power from the transmitter. There will be some interaction between the adjustment of these controls as the correct values are approached but with a little practice one adjustment can be

(Continued on Page 12)



Close up view of the interior of the screening box showing the construction of R1 and L1 and L2.



**EVERYTHING THE
RADIO HOBBYIST
NEEDS AT . . .**

WARBURTON FRANKI

MULLARD 5-STEREO-7 AMPLIFIER KITS

Includes Chassis, Front Panel, Knobs, Escutcheon, Top and Bottom Plates, and all Hardware required. Leaflet included. Shows layout of Components and Assembly Instructions. Price £5/19/6, freight forward.

TRANSFORMERS to suit above

OUTPUT: A & R type 4005—57/- ea. plus Sales Tax 25%

POWER: A & R type 1896—69/8 ea. plus Sales Tax.

Freight forward.

STEREO INDICATORS

Large Single Scale Dial—centre zero. Polished Wooden Case—5½" x 3½" x 2¾". Price 96/- plus Sales Tax 12½%, plus Pack and Post 2/9.

TRANSISTOR TESTERS

Tests all Transistors and Diodes. Battery operated. Price £10/10/0 plus Sales Tax 12½%, plus Pack and Post 3/9.

• IMPROVE T.V. RECEPTION with a Q+ T.V. BOOSTER

Simply attaches to back of T.V. Set and is plugged into A.C. Mains.

Guaranteed Improved Pictures in Low-Signal Areas. Leaflets available on request.

Price 15 Gns. Retail plus Pack and Post 7/6.

OPEN SAT.
MORNINGS



WARBURTON FRANKI

359 LONSDALE ST., MELBOURNE — MU 8351



TRADE ALSO
SUPPLIED

Please include Postage or Freight with all Orders

★ ★ SPECIALS ★ ★

CENTRE-TAPPED SPEAKER TRANSFORMERS

Fully enclosed. To suit 2-4 ohm Speakers. Primary Impedances: 5,000, 10,000 and 14,000 ohms. 19/11 each plus Pack and Post 2/1.

STEREO EARPIECES

Magnetic type 8 ohms Impedance. 26/8 pair plus Sales Tax 25%, plus Pack and Post 1/8.

HI-IMPEDANCE HEADPHONES

Type SF20. 20/8 pair plus Sales Tax 25%, plus Pack and Post 1/8.

METAL INSTRUMENT CABINETS

Complete with loose panel. Hammertone finish.

Size: 5" x 5" x 4" — 13/4.

7" x 6" x 4½" — 15/4.

9" x 7" x 5½" — 18/-.

Plus Pack & Post 2/9.

Plus Sales Tax 12½%.

SPEAKERS-BRAND NEW

Well known local make—8" Dual Cone, 15-ohm Voice Coil 50/- plus Sales Tax, plus Pack and Post 3/8.

SOLDERING IRONS—240 v.a.c. OPERATED SUPERIOR—New Model

Supplied with two Copper Bits, 3/16" and 7/16" diameter. Rating 30 watts. 24/- each, plus Pack & Post 2/-.
SOLDERING IRONS

6 Volts A.C./D.C. operated. 15 watts. 7/32" bit. 37/6.
plus Pack and Post 1/-.
RECORDING TAPE

Plastic Base. 7", 1,200', 29/- plus Sales Tax 12½%. 5", 600' 15/7 plus Sales Tax 12½%. 3½", 200', 6/- plus Sales Tax 12½%. 3½", 175', 7/9 (including attractive plastic box), plus Sales Tax 12½%. Plus Pack and Post any of above 1/3.

TRANSISTOR AMPLIFIERS

De Havilland 10-Watt Portable P.A. Systems. Weight 17½ lbs. including internal batteries. Monitor Speaker built in. Output impedance 15 ohms. Inputs for microphone and Pick up. Sensitivity: Microphone 1 mV. r.m.s., Pick-up 150 mV. r.m.s. Frequency Response: ±3 db. 200/10 Kc. Price £41/1/5 plus Sales Tax. Freight fwd. Also available, PERSONAL MODEL, 1-WATT OUTPUT. Suitable for Store Demonstrations, Factory Inspection Parties, etc. Price £19/11/11 plus Sales Tax.

V.H.F.—THE PRESENT STATE OF THE ART

JUST recently there has been a great hue and cry about the lack of news from the six metre boys with regard to activities and the like. How can there be news when there is no activity? What has happened to the exclusive six metre operator of the DX season? Has he got cold feet? Or can't he be bothered with the general friendly rag-chew on six metres during the winter?

Of the 60 odd stations I have so far worked on the 6 mx band, I can say almost without contradiction that I have worked 10 or so in the last two months. I heard some of them on—the last VK2-VK4 breakthrough. They came on for an hour and have not been heard since. One of them missed the break, had a local contact to find this out and went off the air after that contact. Why? Aren't the local boys on 6 mx good enough to talk to? Don't they represent a big enough challenge to the powers of your "wonderful" equipment?

Your only fooling yourself. It only takes a watt to work VK4-2, 5, etc., during a breakthrough. Almost anything with a piece of wire sticking out of it will do for the receiver, but you just try and get that watt through to a local station. That is an achievement. Try a consistent contact over 600 miles, winter or summer! There you are achieving something. Those things will prove your equipment.

Do you bother to listen to anything below a so-called S9? Do you just dismiss it as "he hasn't got his beam in my direction"? How about getting up and turning your beam around, or is that just too much hard work? There are, or so I was taught, four main compass points—N, E, S, W. When you call CQ, call it in each direction; if somebody doesn't come back to you there is something definitely wrong. I would suggest you check your equipment in this case, maybe the converter is at fault. Maybe the noise level is running S6-S. It does here, too, but still the majority of metropolitan stations can get a strength report of S8-S from here, off the side or back of their beams mind you.

When you do eventually come on the air and call CQ, the call is general and is intended for anybody, so by rights you should answer the first person you hear calling you. This clique habit of tuning the band to see if one of your mates is on is a disgusting practice. If you want to talk to your mate, call him and don't make it a general call.

However, if he doesn't come back, how about making the call general, there are other Amateurs around who may like a contact, maybe waiting for somebody to indicate his presence on the band so that they can try out their transmitter, etc.

Those are my opinions on why, on 6 mx, there is lack of interest in 6 mx and consequently lack of news. There are, however, a few other points on these v.h.f. bands which are certainly screwy.

USE OF SIX METRES

We have (had?) four megacycles of band to play around with. On 6 metres we use densely the first 500 kc. The number of stations on 6 mx could quite easily fit in the 500 kc, with tons of room to spare. Other than that there are a dozen stations probably whose crystal frequencies put them above this. Is it any wonder then that the P.M.G. want to take away two megacycles of this band? 3,500 kc. of it is virtually wasted space, we don't use it, so why the great hullabaloo over missing 2,000 kc. of it? After all, we still have 1,500 kc. which will not be used. All right, so it's an International allocation, but at least most of the other countries use it. The P.M.G. is not blind, nor is it independent, it must pick up channel space where it can and what better place than the unused portions of the Amateur bands. It's not activity on the bands that will help us keep them, it's using them. When you get given 4,000 kc., for Pete's sake use it or you soon won't have 4,000 kc.

Much the same goes for 2 mx, but since I don't use this band I won't say anything.

SCRAMBLES

These I am getting fed up with, mainly because after one hour total operating time, in two of these farces I have a total of eight points, and I can hear nearly every station quite a few db. over 9 (my S). As I said before, there are four points to the compass, how about listening in each direction or better still put up a turnstile. After all, all my DX has been worked using one of these and I've got and given just as good a report as six elements. The use of one of these antennae may well be the difference between that deciding point where somebody didn't bother to turn his beam. Try it anyway, then everybody has a chance of scoring, not just those with S9 (anybody's) signals.

REPORTING

This is another practice which is being abused, typical example being: "If I can hear him and understand him—5 x 9." This does not help the bad at the other end. After all, he was probably 5 x 9 last time but is 6 db. weaker this time. It doesn't cost much to install an S meter in your receiver.

All that is required are a couple of pots (5K and 100K), two resistors (1000 and 100 ohms), and an old aircraft temperature gauge. Connect the 1,000 ohm resistor between HT+ and IF can B+, the two pots in series across HT+ and earth, and connect the meter between the junction of the 1,000 ohm resistor and the IF can B+ and the junction of the two pots. The pot closest to HT+ is the 5K one. The 100 ohm resistor shunts the meter.

To adjust the meter take the particular if tube out and adjust full scale deflection. Put the tube back in, disconnect the aerial and adjust the 5K pot for zero. Decide on your own scale

and stick to it. It at least makes your reports reliable, even if not accurate.

Quality is not an important factor in our transmission, but readability is. There is quite a big difference between the two and also a big difference in the amount of bandspace used, and on the "crowded" v.h.f. bands bandspace is important. Try restricting the top and bottom of the audio range and see if it doesn't make a difference.

Just try a few of these things, that's all I ask. After all, it's what you are allowed on the air for in the first place.

—One Angry Young Man."



HINTS AND KINKS

PAINLESS MOUNTING OF THE MOBILE ANTENNA

Those keen mobileers who are sometimes dismayed at the thought of drilling holes in the new car, or fitting unsightly brackets at the rear to mount a loaded whip, take heart!

I obtained a 4 ft. 6 in. length of thin walled (1/32 in.) brass tubing, 5/16 in. inside diameter. (Obtainable from Gunnerson Allen.) This size slides smoothly over the standard b.c. antenna. At one end is the usual loading coil and a 4 ft. section of brass tubing completes the antenna on top.

A piece of dural tubing was attached to a block of polythylene drilled in the centre for a snug fit and the lower section of the whip slides through. The other end of the dural is suitably flattened and drilled for attachment to the side mounting bracket on the sun visor and gives rigidity to the antenna.

The antenna loads normally and may be set up or dismantled and stowed in the boot in minutes.

As my rig (converter and tx) is concealed in the glove-box, the XYL and I are now on speaking terms when Sunday driving!—VK3AHG.

AN AID FOR YOUR BEAM

I do not know whether the following idea is original or not, but have found it quite effective and easy to construct. It has been in use at this QTH for over 18 months now. The only maintenance being a drop of oil now and then.

The main item is a 1" breast drill which gives a very slow movement when turned by a motor or handle coupled by shaft held in the chuck. A coupling (water) is welded on to the centre of the main wheel of the drill, into which is screwed the pipe which eventually supports the beam. The weight of the mast is taken by sitting the underneath section of the drill into a slot cut in the top of a piece of 1" or 1½" pipe which is set in concrete at the base of the tower.

The mast here carries a 6 element 144 Mc. and a 4 element 50 Mc. beam, and rotates fully without any trouble.

—C. Abernethy, WIA-L2211.

THE FRANKLIN OSCILLATOR

ARTHUR J. BOWMAN,* VK2ASB

THE Franklin Oscillator has long been recognised as one of the most stable v.f.o.'s possible to construct without elaborate precautions against drift. It even surpasses the Bendix frequency meter.

The oscillator about to be described surpassed all the crystal oscillators the writer has built to check the stability. It even surpassed the Bendix frequency meter.

The unit was built on a chassis 9" x 5½" x 2" with a special box 3" x 2" x 9" for the tuned circuits.

The Franklin is claimed to be stable to within a drift of 25 c/s. up to 7 Mc.

but I found silvered mica to be superior. Originally C1 and C2 were 2.2 pF. but it was found that the oscillator tended to drop out of oscillation on parts of the band so C1 was increased to 3.3 pF. and the oscillation continued all over the band.

A 0.001 μ F. silvered mica was used for C6 but as this is rather a large physical size, a 0.001 μ F. N.P.O. or even H1 K could be used if so desired.

R1 was a selected 1 megohm 10% \pm w. This value was selected on a R/C bridge as being exactly 1 megohm, but 10% tolerance is quite adequate. R6 was a

The value of R6 must be kept as low as possible to limit the effects of the 6CB6, particularly when it is removed from the socket.

The filament voltages on V1 and V2 were reduced to 5.0v. and the cans on these valves were covered with asbestos string. This tended to limit the effects of changes of room temperature.

A shield was placed around V1 components, as shown, to prevent feedback. R4 was fed through the shield to the h.t. and decoupling.

The transformer T1 was an old transformer (if) out of a 522 receiver. Capacity was added to bring it from 12 Mc. to 5 Mc. Then a resistor was placed across the primary to dampen the tuned circuit to obtain a broad-band effect.

The leads from the two coupling condensers should be kept as short as possible. All earth points to the chassis were wired with 12 s.w.g. tinned wire and all points were connected with the same type wire.

A small crystal oscillator for band checking was wired in, although this has not been shown in the diagrams. If you have a crystal calibrator on your receiver, as most modern sets have, the crystal will not be necessary.

The power supply must be well regulated with a VR105 or VR150. Hit the VR tube really hard by applying about 210 volts to it, but don't exceed the 30 mA. limit imposed by the tube ratings.

After the VR tube connect about 50 μ F. in electrolytics across it and then some if necessary. (A resistor should be placed in series between the VR tube and the high capacity—otherwise the VR tube will "oscillate" on motorboat.—Ed.) Every bit of 50 cycle ripple must be eliminated or the oscillator will tend to be modulated with the 50 cycles.

All other resistor and capacitor values may be normal quality components.

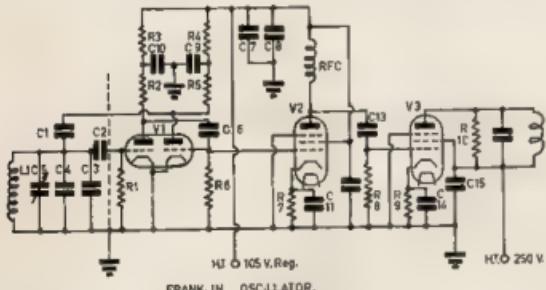
COIL AND TUNING CONDENSER ASSEMBLY

A layer of $\frac{1}{2}$ " asbestos was glued to the inside of the metal box. The coil and condenser was mounted inside, then another layer of $\frac{1}{2}$ " asbestos was glued to the outside of the box for additional heat insulation.

The coil was 8 turns of 14 s.w.g. enamel covered wire on a $1\frac{1}{2}$ " ceramic former. The former was taken from the v.f.o. of an AT5. It must be wound very tight and if possible set with goo.

The tuning condenser was a 10-110 pF. ceramic mounted condenser. A 100 pF and 150 pF. (both 5%, silvered mica) condensers were placed across the tuning condenser. This combination gave 5.0 Mc. to 5.20 Mc.—ample coverage for 7 Mc. and 14 Mc. (on sideband.—Ed.)

Components inside the coil box were wired up using 12 s.w.g. tinned copper wire. The two coupling condensers, C1



FRANKLIN OSCILLATOR.

C1, C3—2.2 pF silver mica, 5% tolerance.

C2, C5, C10—100 pF. silver mica.

C4—150 pF. silver mica.

C6—2.2 pF. silver mica.

C7, C8, C11, C12, C13, C14, C15—0.01 μ F. mica.

C9—8 μ F. electrolytic.

R1—1 meg., $\frac{1}{2}$ watt.

R2, R3—50K, 1 watt 1% Hi-stability.

R4, R5—30K, 1 watt 1% Hi-stability.

R6, R7—1.5K 1 watt.

R8—15 to 25K $\frac{1}{2}$ watt.

R9—470 ohms 1 watt.

R10—100K $\frac{1}{2}$ watt.

R11—15K 1 watt.

V1—12AT7.

V2, V3—6CB6.

The one built was stable to within 0 c/s. drift at 5 Mc. for a period of six hours.

The voltages applied to the oscillator itself do not effect the frequency—in theory. The author found this to be untrue. The tubes used in the oscillator and buffer have no effect on the stability—once again a slight distortion of fact.

NOTES ON THE COMPONENTS

Anyway, to the construction. The oscillator found to be most suitable was a 12AT7 into a 6CB6 with a 6CB6 following. The output from this combination was found to be approximately 0.1v. at 5 Mc. The valve sockets must be ceramic.

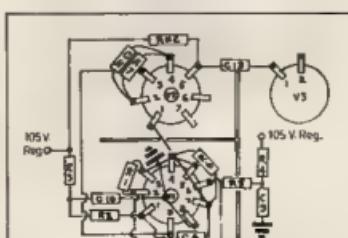
The plate load resistors were 30K 1w. hi stab. decoupled with two 0.01 μ F. silver mica condensers and two 1.8K hi stab. resistors. These hi stability resistors were 1% but I don't think the decoupling resistors need be quite so good a quality. I do recommend, however, that the plate load resistors should be very close tolerance.

The decoupling condensers, C1 and C2, must be silvered mica. N.P.B. type condensers are claimed to be adequate

value selected by trial and error on the oscillator itself.

If, when you construct this oscillator, you find that it is not very stable, try varying the size of R6 from approximately 10K to 25K.

R1 and R8 must be earthed at the same point with very short pigtail. Single-point earths must be used on the oscillator.



LAYOUT FOR OSCILLATOR SECTION.

* 107 Cronulla Street, Cronulla, N.S.W.

1961 EDITION

RADIO AMATEUR'S HANDBOOK

Published by AMERICAN RADIO RELAY LEAGUE

Price 46/3 Plus 2/- Postage

BIG . . . REVISED . . . COMPLETE

An invaluable reference work and text for everyone—Radio Amateurs,
Engineers, Lab. Men, Technicians, Experimenters, Students,
Purchasing Agents, etc.

KEEP PACE WITH PROGRESS!

ORDER YOUR COPY NOW!

McGILL'S AUTHORISED NEWSAGENCY

"Established a Century"

183-185 ELIZABETH STREET, MELBOURNE, C.1, VIC.

"The Post Office is opposite"

Phones: MY 1475-6-7

TYPE 65

General purpose with
low frequency response
suitable for lively halls.

TYPE 66

P.A. use where less low
frequencies are required
than the 65 with a lift in
the middle frequency to
ensure high output without
feedback.

TYPE 67

Communication use, has
a further reduction in
low frequencies than the
66 and increase in high
frequencies for intelligibility
through noise.

THREE INDIVIDUAL TYPES IN THE FAMILIAR "65" CASE



Retail Price including Sales Tax

Type 65 MA	£11/0/7
.. 65 MD	£8/19/0
.. 66 MA	£11/3/6
.. 66 MD	£9/3/0
.. 67 MA ..	£11/3/6
.. 67 MD ..	£9/3/0

*
Available in Low (M.D.)
50 ohms and High
(M.A.) Grid Impedance.

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VICTORIA

PHONES: BL 1300, BL 4556

NATIONAL FIELD DAY 1961—A VK6 EFFORT

AS early as June 1960, it was decided at a meeting of the West Australian V.h.f. Group (Inc.) that the club station (VK6VF) would take part in the multi-operator section of the then forthcoming Field Day Contest. To this end a committee was formed whose task it was to rustle up the receivers, transmitters, aerials, etc., etc., required. All bands, 3.5 to 144 Mc., were to be catered for.

A major windfall came along when Kevin VK6ZCB decided to build his shack into a caravan. This he offered for the occasion as a complete v.h.f. station with additional space available to accommodate some 80-10 metre gear.

More equipment problems were very nicely solved when Jim VK6RU offered his Collins station (75A4 and 32S1 at reduced power). Similarly, Jack VK6BU obliged with his Collins 75A1 and Geloso GL222 (also at reduced power). Thus main equipment requirements were covered.

Antennae became the next problem. Numerous ambitious schemes were suggested but eventually it was agreed that a simple system of dipoles for the h.f. bands, with yagis for the v.h.f.s., be used. The dipoles were planned to be arranged in the form of a "vee" with of course separate feeders for each.

After some rummaging around, a 2k.v.m. alternator, driven by a single cylinder petrol engine, was located. Whilst we are appreciative, the source of this is best left unmentioned!

Finally, a rendezvous was arranged for 9 a.m. on the site (in the Darling Ranges, 1,000 ft. s.s.l.) on 4th February, for the erection of antennae and setting up of gear.

9 a.m. Saturday duly arrived with several energetic persons on hand and ready for work. Kevin's caravan was moved into position and he and Roy VK6ZDS got to work on erecting the v.h.f. beams atop a 50 ft. telescopic mast. The subject of pinched fingers is not popular with Kevin by the way! Meanwhile, the two 30 ft. telescopic masts for the h.f. dipoles were under way, forming, in addition to a convenient gum tree, the three points of the aforementioned "vee". Here Roy VK6RY gained claim to fame with a stone and length of string!

Problems commenced with the unravelling of prefabricated dipoles. It appeared that more attention had been paid to rolling them up than the possibility that they would need unrolling — talk about wire puzzles!

Some little time later a trial run was made on the alternator with satisfactory, but deafening results an open exhaust system. At first a voltage variation of some 15-30 volts was experienced, but an adjustment to the mixture control corrected this.

As everything seemed to be under control, all agreed it was now time for lunch.

The weather at this stage was very hot and prompted the remark: "... at least this is better weather than the storms experienced by a VK3 team of a previous year..." No sooner were the words spoken than some very black

clouds loomed up, thunder boomed, lightning flashed, and down came the rain in a freak cloudburst!

First thoughts were for the unprotected power plant. A canvas sheet, brought along "just in case of emergency," was hurriedly flung over the unit. Obviously, though, some more permanent shelter would be required so two cars were commandeered to support the sides of the tarpaulin. This was fine until a miniature lake collected in the middle. This further problem was overcome per medium of VK6RY and VK6HK who acted as centre posts for the next half an hour or so until the weather cleared sufficiently for some bush timber supports to be cut.

Everything was now felt to be ready for anything the elements could turn on.

At 3.30 p.m. W.A.S.T., Jim VK6RU and Jack VK6BU arrived with their equipment which was set up and tested in quick time. The alternator had been running sweetly for some time now.



4 p.m. (W.A.S.T.)—Operation got under way with an added snarl from the power supply and much enthusiasm from the operators—but the team had hardly got into stride when at 4.10 p.m. "old faithful" conked out. Diagnosis—ignition trouble.

At least operations did not cease entirely, thanks to the 50 Mc. transistorised walkie/talkie of VK6ZBC and mobile 50 Mc. gear of VK6ZCB. Several contacts were made thereby.

Meanwhile the boys commenced dismantling the engine amidst much helpful advice from onlookers. After the flywheel had been removed it was found that the magneto was in the process of falling apart. This corrected, the plant was deemed ready to start again.

At this point, VK6RU, not one to waste contest time, left the power tent and headed for the controls of his rig. By the time the 250 volts arrived at the transmitter he was ready for the air.

Contacts came but slowly until just before sunset when once again the engine conked. This time flooding was the problem and fuel was found running freely round the open exhaust. This is not recommended practice! Roy VK6RY again dived in and pulled the "carby" down. This time power was

available after only a ten-minute delay. The plant kept running now until closing time, although on several occasions a dash had to be made to make adjustments to prevent a further stoppage. Voltage varied at random during this period between 150-260 volts!

On Sunday, 12th, operation was more routine with contacts on all bands coming slowly but steadily. Even "old faithful" must have kept in mind the saying, "The better the day, the better the deed," as she kept going during the whole of the day's operating period.

Something of a diversion occurred on this Sunday morning. A visiting Amateur remarked, "If you want a contact on another band you had better come and help me put up my 20 metre quad!" So several bodies took him at his word, climbed into a car and off to his home QTH. After much pulling, juggling and twisting, up went the quad, and the promised contacts were later made. This is really working for contacts!

Interior of VK6ZCB's caravan, looking to the front. This set-up was used in the National Field Day Contest of 1961.

Tension relaxed as time ran out and everyone was still able to smile and joke about the events of the week-end. We certainly found that much enjoyment can be had by a joint effort in the National Field Day Contest and all are looking forward to next time!

As a closing word, the thanks of the V.h.f. Group of W.A. (Inc.) are proffered not only to those who are mentioned in the text but to the many people who assisted both before and during the event.

ROYAL CHARTER FOR RADIO ENGINEERS

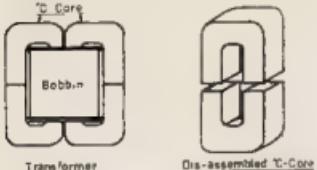
The Council of the British Institution of Radio Engineers has the honour to announce that Her Majesty The Queen has been pleased to approve the grant of a Charter to the Institution. The Order in Council is dated 2nd August, 1961.

The honour conferred on the Institution sets the seal on its achievements during the past 36 years. The Institution was founded in 1925 when radio engineering, as an industry, was in its infancy.

D.C. POWER CONVERTER FOR MOBILE

(Continued from Page 3)

transformer temperature rise should be about the same as a receiver type power transformer. A metal box large enough to house all the components should provide adequate cooling area. It is well to remember that the transistor manufacturers permit operation with an internal junction temperature up to 100°C.



Suggested winding details are as follows. The transformer should be wound on a fibre former which may be obtained with the two C-cores and it may help if stout cardboard end plates are made and cemented to the fibre. If modern winding wire with tough, straw-coloured enamel is used (such as Lewmex) there is little need for insulation anywhere in the transformer, but layers of paper or tape should be inserted between windings to provide a flat surface on which to build. If old wire is used then a layer of paper, or empire cloth (if you are a Loyalist) should be interleaved between each layer of the secondary. To ensure

oscillation when switching on for the first time, the start and finish of each primary and feedback winding should be carefully marked and wired up as indicated on the circuit diagram.

Primary 1 and 2: Each 23 turns of 18 to 20 s.w.g.

Feedback 3 and 4: Each 29 turns of 26 s.w.g.

Secondary: See text. Use 26 s.w.g.

None of the wire gauges are particularly critical, but if thicker wire is contemplated consult the wire tables to ensure that it will fit all.

When assembling C-cores, keep the halves in the same relative positions as they were when purchased. This will ensure minimum air gap and lowest exciting voltamps. Each core should be clamped together by twisting a loop of stout wire around it, as the special banding strip supplied is hard to use if the proper tool is not available. To reduce vibration, jam the cores in the coil former by using thin wood shavings and to provide protection against climate it is suggested that the entire transformer be boiled in beeswax or dunked in shellac.

At the time of writing three units have been constructed, two by the author, and one by a fellow VK5 Ham.

Here are some test results obtained using accurate model 8 Avo meters:

1. Input: 12.6 v. at 8.87 a.
Output: 405 v. at 175 mA. = 71 w.

Efficiency: 82%.

2. Input: 12.6 v. at 4.26 a.
Output: 410 v. at 110 mA. = 45 w.

Efficiency: 85%.

3. No load input current = 0.8 amp.

4. Input current with output shorted = 2.4 amp.

THE ANTENNAMATCH

(Continued from Page 5)

worked against the other until a condition is reached where both the phase angle and impedance indicators have zero readings. In this condition, the r.f. power accepted by the aerial should be the same as that into the artificial load. The p.d. loading should also be equal to that when loaded into the dummy aerial.

Transmitter conditions (that is the values of C_1 , L and C_2) should not be altered after being set up on the dummy aerial and all subsequent adjustments to bring about equal conditions must be made entirely with the matching network.

Experience has shown that with fairly large values of impedance and phase angle condensers widely varying conditions can be catered for. However, if reactance cannot be completely eliminated, i.e. phase angle brought to zero, different values of inductances of the split coil should be tried.

Short acquaintance with The Antennamatch as an aid to correct matching and loading of the transmitter to the aerial will serve to prove its very valuable purpose and will make the user realise just how difficult it is to achieve optimum conditions without it.



THE FRANKLIN OSCILLATOR

(Continued from Page 9)

and C_2 , were wired inside the box also. The pigtailed wires were cut short to prevent vibration.

Incidentally, all components in the oscillator must be mounted very rigidly. No vibration must be permitted. The gang must have a very smooth action.

CHECKING THE OSCILLATOR

Now a few words on the methods used for checking.

First I beat the v.f.o. with an xtal oscillator just haywired together. There was some drift, about 400 c/s. Next I used a crystal calibrator and for the first hour I found that there was some drift here, too. I was feeling rather disheartened, so I checked it as a last resort on the Bendix BC221.

To my amazement I found that though I had to "correct" the Bendix about every 30 minutes, each time I switched back to "operate" the v.f.o. was zero beat. Several times I checked the v.f.o. to see if it was still operating and sure enough it was.

Then I connected the Bendix output to a c.r.o. and zero beat on the "check" position, watching the pattern on the c.r.o. (a sine wave). When the Bendix was on 5.0 Mc. I zero beat the v.f.o. and once again a sine wave. Whenever I saw a distorted wave form on the c.r.o. I "checked" the Bendix and sure enough the v.f.o. was exactly zero beat.

I allowed the v.f.o. to run into the Bendix for a total of six hours and not once did I have to reset the v.f.o.

This v.f.o. is the ideal v.f.o. for the s.s.b. man. The output is not very high, but for s.s.b. the output is not required to be high.

BRIGHT STAR CRYSTALS

FOR ACCURACY, STABILITY, ACTIVITY
AND OUTPUT



Our Crystals cover all types and frequencies in common use and include overtone, plated and vacuum mounted. Holders include the following: DC11, FT243, HC-6U, CRA, B7G, Octal, HC-18U

THE FOLLOWING FISHING-BOAT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS:-

6280, 4095, 4535, 2760, 2524 Kc.

5.500 Kc T.V. Sweep Generator Crystals, £3/12/6.
100 Kc and 1000 Kc Frequency Standard,
£8/10/- plus 12½% Sales Tax.

Immediate delivery on all above types.

AUDIO AND ULTRASONIC CRYSTALS—Prices on application.
455 Kc Filter Crystals, vacuum mounted, £6/10/- each plus 12½% Sales Tax.
ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.02% £3/12/6, 0.01% £3/15/6, plus 12½% Sales Tax.
Amateur—from £3 each, plus 12½% Sales Tax.

Regrids £1/10/-.



CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you.

New Zealand Representatives: Messrs. Carrel & Carrel, Box 2102, Auckland.

Contractors to Federal and State Government Departments.

BRIGHT STAR RADIO

46 Eastgate Street, Oakleigh, S.E.12, Vic. Phone: 57-6387

With the co-operation of our overseas associates our crystal manufacturing methods are the latest.

AMATEURS TAKE PART IN PROJECT PHOENIX

The recent party of Victorian firemen which visited country centres in Western Australia consisted of a number of Amateurs. The visit was sponsored by the Western Rural Fire Brigades Radio Group at the invitation of the Bush Fires Board of WA.

Purposes was to discuss and demonstrate fire fighting methods with particular emphasis on the use of radio. Phoenix was also given time on the project when it was found that every member of the party had suffered serious or total loss in the Victorian disasters of the early 1940s.

Leader of the party was John JAGD, who President of the Group and operator of the Dunkeld Base Station VL3JF and Associate Hugh O'Rorke, affectionately known to firemen as "Chief", flew over to operate the Group's portable base station under his own call VL3JL. Hugh first obtained this license to work with several amateurs in the early days of fire radio and pioneered the present system of networks.

The Group took their own cars and equipment and arrived on the weekend after delivery of news No. Much of the early planning was carried out by the Group Secretary, Tom Kinnerley VL3JKN. Others included Pat 2ADN the S.W. Zone W.I.C.E.N. Co-ordinator, Hugh XYL Nell using the call VL3JKW, Tony YWV, Peter Hallinan, operating the old call 2KI, Kevin ZAKR who travelled with John JAGD, using VL3KK, and Don SAKN S.W. Zone Secretary and deputy co-ordinator of S.W. Zone W.I.C.E.N., under the call VL3KJ.

Apart from two notable exceptions, the majority of the visitors did not contribute to network design much to the surprise of the VLE boys. The local outfit was found want-

ing and was replaced by a spare outfit complete with antenna.

The gear included a re-built 588 and ATREZ and a little home-brew designed by Bert TBI, then 3B1. This one uses a SAQ6 xtal oscillator in a 5763 modulated by a 5763 Heising fashion, with a two-tube xtal converter to the car radio. The owner-operator, Tom, another amateur member, had built and tested the rig which uses the call VL3JKN and is the top performer in the network. Ignition interference simply is not by virtue of complete shielding of the whole system. No ignition suppressors are used. Tom is now pondering the problem of the other outfit's interference and those wind driven lighting plants!

Two sets of Amateur gear were taken, that of 3AKRN and of 3AKR. The former was pressed into service on the smoke frequency which coincided with Amateur 3AKR. The latter, mounted in the car of John JAGD and using his call, was operated mainly by Kevin 3AKR. Our logs showed a total of some 75 stations contacted or visited, too many to list. However, amongst them were See AGH who is also in the smoke pump at Naracoorte in the Adelaide Hills. At Port Augusta Graham SCE showed the Group over his f.b. gear. We owe Graham an apology for disturbing his all-too-infrequent rest and our sincere thanks for his support to the Project Phoenix Network. Our first eyeball VL3 in the West was with Tom GTR and his (square-eyed) master where the Northam demonstration made the news session. Tony JWB with his aristocratic mobile, stole the limelight of course.

John, operator of VL3KJ, distinguished himself by working Tom VK5TC at Wilkes Base on 7 Mc, doing 78 knots or so with the

v.f.o. as front-end injection for the s.s.b. sig. At Bunbury Les SWL played host to 3AKRN and 3AKR and managed to provide tape recordings from us for SWL Wally 6AG brought Skipper SWS to meet the convoy in Perth. Skipper took a keen interest in the gear and especially the fibre glass whips. He told us how he overcame the problems and accounted by the lightness Amateur gear left us somewhat humbled and realising that our own are puny enough. Wally arranged a Hamfest later that evening and those whom we met included George 6AK and XYL Ruth Jack 6AK, Pat 2ADN and Australian 2AKR. Wally from 6AK and Ruth Jack 6AK were present. John JAGD lost no time in extending the left hand to Hans who is the River Ranges D.C. of Scouts. Hans, with Pat 6PH, will be organising the VK6 and during the Jamboree-on-the-Air in October will bring along his son, another D.C. Kojo, from Ghana, who promised to alert the shape in 6GI, so swing the beam that-away during the week-end you DAB men.

The Group visited the P.M.G. monitoring station, YNA, situated just outside Perth. Here the officer-in-charge, ex-ABJ, showed us receivers that would make the sideband boys green with envy and that would leave the well known AFDR model for dead. The antenna farm left us speechless and the frequency measuring apparatus again was out of this world.

At Merredin on our re-entry stage, Mai 6MU took charge and after seeing the local b.s. station he took us into that wonderful shack the town people call.

Time does not permit mentioning all those whom we met or contacted, but our thanks go to all the VK6 and VK5 boys who gave us and the VKL boys such a wonderful time, to the VKL home owners who kept us posted with news from home, and especially to Dave SDB and Len SLG and Mai 6MU who made sure we got home safe and sound. In saying 78 and UCAGVN you may be sure the Net really means it.

HOW CAN THE AMATEUR ASSIST?

Many times we were asked by Amateurs "How can we help in this very important show?"

Three problems face the new operation when his brigade decides to form a team. They are the obtainable equipment to install and maintain it in the vehicle or base station, and in the case of mobile, to silence the vehicle noises. In most cases the equipment will be commercially made. However, some may prefer disassembled parts to be available to assemble supply and will certainly need some modifications well within the average Amateur's capability. Or some may want home-build stuff.

Here the Amateur may help by designing and building the equipment to build the stuff. There is too the possibility that a group of Amateurs will follow the VK7 boys and build the stuff as a community project. Let it be not forgotten that nearly all the VL3 stuff on Project Phoenix is either home-brew or custom-made Network design.

Installation is normally the maker's responsibility but distance, coupled with today's habit of changing the vehicle frequently, means the job must more often than not be done locally. Radio vehicles cannot be built in a short time, too long which means no radio unless the outfit can be speedily transferred to another car. Regular checking of the antenna for resonance and the whole outfit for performance will make the difference between a good network and one at all. First aid to the broken-down set when every minute counts may save many acres and even many lives.

However good the equipment is on the bench, it is poor if it can't be worked upon. Unleashed, the ignition, generator, and other noises from the vehicle are eliminated. This is a recurring problem and action study of this problem and suitable action again in the field, will repay hundreds of hours.

Finally, recognise these VL chaps for what they are, expert firemen and first class operators. Listen to their problems and look for the solution by experiment if no other way. Don't try to teach them operating techniques for your radio equipment, but draw them into Amateur procedures and encourage those who would understand the mysteries of radio for they are the future network technicians and a fertile field for recruits to Amateur Radio.

Every Amateur in Project Phoenix started as a neophyte. (Is there a neophyte in VK3 anyway?) Is an active member of the W.L.A. and the W.I.C.E.N. —Don VK5AKN.

AMATEUR RADIO SERVICE 605 ABERCORN STREET, ALBURY, N.S.W. Phone 1695

wish to advise the following services are available:

● MANUFACTURE OF—

- ★ A.M./S.S.B. Transmitters and Receivers.
- ★ Crystal Locked Front Ends and Complete Receivers.
- ★ A.M./S.S.B. Exciters and Generators.
- ★ Voice Control Units.
- ★ T/R Switches.
- ★ "Mickey Matches".
- ★ C.R.O. Monitors, Panadapters.
- ★ V.F.O.'s. (S.S.B.)
- ★ Linear Amplifiers.

IN FACT ANY AMATEUR RADIO EQUIPMENT

● SERVICE TO EXISTING EQUIPMENT.

● CONVERSION OF SURPLUS UNITS, MODIFICATIONS, ETC.

Also s.s.b. conversion for equipment such as W2EWL conversion for Command Units, AT5, AT21, TA12, ART13, etc.

These are some of the services available. Let your problem be our problem.

QUOTATIONS FREELY AND GLADLY GIVEN

CHOOSE THE BEST—IT COSTS NO MORE



**Resin Core
SOLDERS**
for reliable connections

O. T. LEMPIERRE & CO. LIMITED
Head Office 2741 Bowden Street, Alexandria NSW
and at Melbourne • Brisbane • Adelaide • Perth

ECKO NO. 88 TRANSCEIVER

Portable, xtal locked 4 channel, 40 to 43 Mc., 14 valves, 1L4, 1T4, 3A4, etc. 12v 3a input power supply. Less crystals, mike and headphones, etc. To Clear, £6/10/- each

BELDEN RUBBER COV. FLEX

Single, 1/32 inch synthetic insulation, 1,000 ft. reel, 50/- . Weight approx 5 lb

GENEMOTORS

Command Receiver Genemotors, 28v input, 250v. 60 mA. output, new, 25/-

SAKURA CIRCUIT TESTER

Model TR-6S

Sensitivity d.c. 20,000 ohms/volt, a.c. 10,000 ohms/volt. Ranges—d.c. volts, 6, 30, 120, 600, 1,200v.; a.c. volts, 6, 30, 120, 600, 1,200v. D.c. current 60 μ A, 6 mA., 60 mA., 600 mA. Resistance 10K, 100K, 1M, 10M ohms. Capacitance: 0.001-0.2 μ F. 0.0001-0.01 μ F. Inductance: 30,000H. Decibels: -20 to +17 db. (0 db.—0.775v.—800 ohms). Dimensions: 4 $\frac{1}{2}$ " x 6 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ ". Weight: 1.3 lbs. Price £9/10/- inc. tax.

VALVE SOCKETS

7-pin Miniature Valve Sockets and Shields. New, 15 for £1. 9-pin Valve Sockets, McMurdo, 9d. ea. Octal Valve Sockets 1/6 each

"HAM" RADIO SUPPLIERS

V.H.F. RECEIVERS

Type R89/ARN-5A. 300 Mc. Valves seven 6AJ5s, two 12SN7s, one 12SR7, one 2BD7, six relays, and three crystals of 65229 Kc. As new £5 each

MULTIMETER, MODEL 200H

20,000 ohms per v. d.c. 10,000 ohms per v. a.c.



Specifications:

D.C. Volts 0-3 0-33
A.C. Volts 0-300 0-3000
A.C. Volts 0-10, 50
100, 500, 1,000
D.C. Current 0-51
 μ A. 25 250 mA.
Resistance 0-6 megohms
ohms 0-6 megohms
Capacity 0.01-0.1
 μ F. 1st a.c. 5v
0.0001-0.01 μ F.
0.001-0.1 μ F.
Inductance 0-2000
db plus 22 db
Output range 0-10
50, 100, 500, and
1,000
Battery used UM1
1.5v. 1 piece
Dimensions 3 $\frac{1}{2}$ " x
4 $\frac{1}{2}$ " x 1-1/8" in

Complete with internal battery, testing leads and prods.

Price £5/12/6 inc. tax

1155 GENEMOTORS TYPE 34A

Input 9.3v., output 225v. at 110 mA. Complete with relays and filters, in case. Weight 30 lbs. 18/- each. 5/- handling charge.

5A MELVILLE ST., HAWTHORN, VICTORIA

Money Orders and Postal Notes payable Nth Hawthorn P.O. 5/- Packing Charge

RECORDING TAPE

TMK "Syncrotape" 7" Rolls, PL-12 (Standard)

£1/16/6

TMK "Syncrotape" 7" Rolls AC-18 (Long Play)

£2/10/6

AMERICAN POTENTIOMETERS

American Bradley, 2" long, 1" shaft, 1" diam. Available in following sizes: 20,000, 25,000, 30,000, 50,000, 100,000, 250,000 ohms. 1 and 2 megohms.

Price 2/6 each.

SPECIALS!

SPECIALS!!

U.S.A. Ampenol Coaxial Plugs, 5/- ea. Morse Key and Buzzer Sets, new, 12/-

SCR322 28v. Genemotor power supply, 20/- 5/- packing fee

English Filter Chokes, 40 mA., 100 ohm resistance 3/8 each

Carbon Mike Transformers, small, new, 5/- each

Vibrators, Oak/M.S.P. 6v. synchronous 7-pin AV2511R £1 each

HOOK-UP WIRE

P.V.C. insulation, 0.028. Red or white. 100 yd. Rolls, 10/- Roll.

8 Mc. MINIATURE CRYSTALS

Band-edge market Miniature Crystal and socket, £2.

Phone: 86-6465

AEGIS

* Australia's Own Brand

TESTED RADIO, T.V. and HIGH FIDELITY PARTS

- ★ FILTERS
- ★ COILS and I.F.s.
- ★ SPEAKERS
- ★ KNOBS, DIALS, POINTERS
- ★ AMPLIFIERS
- ★ CONTROL UNITS
- ★ TUNERS, KITS

AEGIS MANUFACTURING CO., 347 DAREBIN RD, THORNBURY, VIC

Phone 49-1017

Trade Review

NEW B. & K. MODEL 1076

TELEVISION ANALYST

Amalgamated Wireless (Australasia) Ltd. announce an addition to the well known B. & K. range of servicing instruments for which they are sole distributors in Australia. The new instrument is known as Model 1076 "Television Analyst".

The "Analyst" is a t.v. signal generating source used for the rapid location of faults in television receivers. An earlier model (Model 1075) is already widely used in television servicing workshops here. The new model possesses all the features of the earlier type, but has an additional integral unit—a circuit analyser, previously supplied as a separate unit. The result is a single, compact unit, convenient in use and easy to carry.

The "Analyst" is a unique system for rapid fault locating. When familiar with the operation of the instrument a skilled serviceman can locate even the most difficult fault—including intermittents—within a few minutes. Valuable servicing time is thereby greatly reduced, since the greater part of servicing time is usually spent in locating the fault.

"Analyst" has a flying-spot scanner to generate a test pattern which is fed to any stage in the receiver. By narrowing down the points of injection a faulty component can be positively located.

The instrument can be used with no t.v. station on the air, thus reducing the great amount of lost workshop time when stations are not broadcasting.

It can be wired into a workshop system to drive a large number of receivers at a time.

The signal can be applied to any stage in the video, audio, r.f., sync. and sweep sections of the set. No external c.r.o. or waveform analyser is needed—the one instrument does the whole job. The instrument costs £170 plus Sales Tax f.o.b./f.o.r. Australian capital cities.

Further information and photographs (if available) may be obtained from Mr. H. A. Tyree, Engineering Products Division, Amalgamated Wireless (Australasia) Ltd., postal address: G.P.O. Box 2316, Sydney, or telephone 2-0233, Ext. 348.

VICEROY S.B. TRANSMITTER

Through the courtesy of R. H. Cunningham Pty. Ltd., "A.R." was able to air-test the K.W. Viceroy Sideband Transmitter.

This unit is supplied with full operating instructions, schematic circuits and an optional power supply, if required. It is only necessary to add a microphone (a D104 was used for our tests) and a morse key plus an serial change-over relay.

The whole unit is well laid out with good front appearance, rigid cabinet and chassis, and all metal parts are cadmium plated and passivated. Adequate ventilation is provided by suitable screened holes. Wiring is neat and cabled with all parts so placed that little service difficulties would be ex-

perienced in maintaining this unit. There is no evidence of poor quality nor under-rated components. Overall, it is a well made, carefully laid out piece of commercial gear.

The Viceroy is a crystal filter type of s.b. transmitter using a 435 kc. xtal oscillator, driving a balanced low impedance modulator comprising crystal diodes into which is fed the audio signal. A half lattice filter rejects the unwanted sideband and the requisite sideband is then heterodyned to the required frequency by means of a v.f.o. and suitable crystals.

The transmitter is wired from a rear connector to a small control box, and the power supply contains a voltage change switch mounted on the panel so that it is necessary that the power supply be adjacent to the transmitter. The control box contains two switches which are frequently used, thus they could possibly be better placed on the transmitter panel; if you use only one band, then this switching is no problem, however it proved awkward during the "A.R." tests.

The v.f.o. is well situated in the transmitter and has a very smooth Eddystone dial, free from backlash and including an auxiliary 0-100 logging scale, with the main Amateur bands, 10-80 metres, calibrated on the main dial face.

Several hours were spent in setting up the transmitter and checking the various tuning controls, VOX, etc. No difficulty arose but the VOX is a little tricky until one becomes initiated. A dummy aerial was used for all these tests.

On-the-air checks were then made using s.b., a.m. and c.w.; broadly speaking, s.b. and c.w. reports were excellent, but a.m. was only fair, but little time was spent in trying a.m. because the Viceroy is a s.b. rig. Operation was had on the 80, 40 and 20 metre bands only as there was no activity at a convenient time on the higher frequency bands. About 35 s.b. contacts were made, mostly with overseas stations and reports of voice quality and v.f.o. stability were good. One comment is made that no sideband selection is available and the Viceroy transmits upper s.b. on all bands except 80 mx, so that on 40 mx one is expected to do the impossible.

Unwanted sideband and carrier suppression reports were quite satisfactory; controls did not need frequent adjustment.

For those who may use this s.b. transmitter for c.w. operation, it can be said that the keying is excellent.

No reports on t.v.i. would be of value as the rig was tested in an area of very high t.v. field strength, so needless to say no t.v.i. was experienced.

The unit includes a.c.c. but its effectiveness could only be judged by several local contacts, as no c.r.o. was available at the time.

It is considered that the K.W. Viceroy s.b. transmitter is a well designed and constructed unit, providing quality performance for a very reasonable outlay.

For fuller information, write to the local representatives, R. H. Cunningham Pty. Ltd., 8 Brunswick Place, Richmond, E.I., Victoria, or the Interstate agents.

GLASS ZENERS IN 400 mW. RATINGS

A brand new line of 400 mW. rated Glass Zener Diodes by International Rectifier Corporation has been announced by Warburton Franki. These feature low voltage values (3.3 12 volts), extremely low dynamic impedance (to a 5 ohms at Lz = 20 mA.), and low temperature co-efficient (-0.062 -0.069% C.).

Designated types 1N746, 1N759 and 1N759A, the new devices are available in both 5% and 10% voltage tolerance types and meet J.E.D.C. registered values of reverse leakage current measured at 1 volt. The new diodes are process selected to provide exceptionally sharp zener characteristics and high stability and excellent voltage regulation is assured over the temperature range from -55°C. to +150°C. Extremely small size (0.285" x 0.110" diameter) and glass-to-metal hermetic sealing insure a rugged unit capable of long-term reliability.

Full details are available from Warburton Franki's offices in Brisbane, Sydney, Melbourne and Adelaide.

Warburton Franki also recently introduced 2nd subminiature glass zener types rated at 250 mW. in the 3.3-30 volt range.

Book Review

SILICON RECTIFIER HANDBOOK

By Sarkes-Tarzian Inc.

A handy volume which will give either old or new Hams an insight into the operation of semi conductor rectifiers.

There chapters on theory, manufacturing methods, rectifier characteristics, typical rectifier circuits, test circuits, rectifier and filter circuit design, and application techniques.

In addition there is a catalogue section showing characteristics of most of the current range of Sarkes-Tarzian silicon rectifiers.

This book costs only 9/- plus 1/- postage and if it only saves you one odd p.v.p. rectifier it will have paid for itself.

Our copy from McGills Newsagency, 183-3 Elizabeth Street, Melbourne.

ELECTRONIC TIPS AND TIMESAVERS

By John A. Comstock

Packed full of ingenious, money-saving ideas, this is one of those easily read books which can save you many pounds and valuable hours during your experimenting.

Price 16/- plus 1/- postage.

Our copy from McGills Newsagency, 183-3 Elizabeth Street, Melbourne.

SCHOLARS TAKE PART IN QSOs

Benalla High School (Vic.) students took part in a radio broadcast as part of Education Week in New South Wales in August.

Throughout N.S.W. schools spoke to each other via radio stations and Benalla was active from Victoria. This was increased following a discussion between Ken SKR of Benalla and a teacher at Long Jetty, near Newcastle.

Members of the Benalla High School Radio Club were active in the broadcast, and Rotary Exchange student, Mary Ellen Ross, from America, spoke to the other schools over the air. Radio Club members, Frank Dyll and Peter Amor, assisted with the radio side of the contact.

"Benalla Standard," 14/8/61.

Correspondence

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

GENTLEMEN'S AGREEMENT

Editor "A.R." Dear Sir,

Continuation of the so-called Gentlemen's Agreement. I am listening c.w. the lower 50 kc. of the 7 and 3.5 Mc band as advocated under the Federal Executive notes in August issue of "A.R." does not really represent the views of members, but a minute section who demand the territory for their out-moded form of communication.

That the Federal Executive should back this minority against the majority is quite beyond human understanding. Research undertaken for the understanding by a top Australian market research executive (and reported in these columns some few months back) proved beyond all doubt that there was hardly any s.w. activity which was in marked contrast to phone, especially s.s.b.

Whilst appreciating there will be more activity on the lower frequency bands as the sunspot minima approaches, this means that more and more s.s.b. and a.m. phone will be moving these bands and naturally will be seen and heard more often. My advice to them is ignore these so-called "gentlemen's agreements" and operate where and when it suits them.

Instead of dictating policy through notes in "A.R." the Federal Executive (if it has any democratic spirit left in it) would be far better seeking the opinion of the members than trying to impose an agreement which has never existed. May I suggest to all that instead of sitting back and following a suggestion by F.E. that members through their own Divisions urge a postal plebiscite on whether we should be a party to these "gentlemen's agreements". To cut down expense for another inevitable plebiscite of the future perhaps a second question might be included: "Are you in favour of the abolition of c.w.?" The answers to the latter, like the former, would be quite startling.

—Roth Jones, VK3BG.

SHORT WAVE LISTENING

Editor "A.R." Dear Sir,

When I first started s.w.l'ing a little over 12 months ago there were quite a few things that I wished to know as the right method could be quite elusive. Information on the air was not to be obtained locally so I decided to pass my queries to the scriber of the s.w.l page in "A.R." who replied telling me of the right procedure, namely for me to hobby. Since then I have written over 12 months many times and never agreed on certain things. My cards, for instance, he said they were lousy. Well, that's OK by me. I thought they were good as it would not do for us to all have the same type of cards. Standards create new ideas and another person can see your errors better than you can yourself!

Maurie is straight to the point, has helped me no end, and no doubt that applies not only to myself but many s.w.l's who write to him. I have been reading his column in that page in "A.R." each month with interest and think that he has done an excellent job in keeping it intact. So keep up the good work OM, as I feel sure that all s.w.l's in VK land appreciate what you are doing for them.

—Chas Abernethy, WIA-L221I

R.D. CONTEST OPERATING

Editor "A.R." Dear Sir,

I have just submitted my log for the 1961 R.D. Contest. As usual I did enjoy the Contest, however I do feel that it was marred by several really atrocious signals from all parts of VK.

It is inevitable in a contest of this nature that some signals will be poor. There are several reasons for this state of affairs

(a) getting "locked up" in the gear or not out of adjustment during the contest unbeknown to the operator.

(b) Chaps come on for about the only time

they put on the air from year to year without bothering to check out the gear beforehand

in other words not even operation.

(c) Some try to get more out of the gear for contest purposes than they would normally, resulting in incorrect loading, improper matching, etc.

(d) Some just plain overmodulate to attract attention and presumably more contacts.

My comments on these four categories are:

(a) Tell the chap when you work him that

there's something wrong with his signal. If

he's any sort of a bloke he'll take it the right way, and act on it.

(b) It's nice to see these chaps come on the air. I really think they are in the minority as offenders, and we probably just have to tolerate them.

(c) These fellows we can help by teaching them that a clean, well modulated signal, even though lower powered, is more effective than a poor higher power signal. Those who can could well assist in providing technical information and practical help to aid in getting the offending equipment operating correctly.

In addition, that I have received much of this type of assistance from other stations around Elizabeth, namely VK3SDV and VK3KNO.

(d) These are the kind we don't want on the bands until they learn better. They are self-centered as such very little counter action with them. Perhaps they could be penalised by disqualification upon report of monitoring stations appointed by the Advisory Committee in each State.

Lastly, but not least, I must comment upon the subject of operating courtesy. By and large I am content with it, as it is impossible not to QRK other stations from time to time, but this business of sitting on a frequency, calling CQ, Contest occupied by an other station, obviously being heard by the offender, causing swap numbers and after having spoiled his attempt going ahead and exchanging numbers with the station you just lost for him, really gets my goat. Fortunately there only appear to be several of these types in VK, but when you can do without them why not?

Here in Elizabeth we have one of the highest densities of stations for a given area, but we all seem to get on quite well with each other. Look at last year's scores! At least six Elizabeth stations were amongst the State's highest.

Why can't other fellows do likewise as far as transmissions and courtesy are concerned? They will find they just get just as much, if not more fun out of their hobby.

In Elizabeth we just can't afford to have stations that sit on transmitters. Isn't the boat on the same foot elsewhere?

Thanks to all good operators who exchanged numbers with me. To the bad ones with incompetent transmissions, the terrors of the Wooff Hong

—Ian J. Hunt, VK3QX.

LIMITED LICENSEES

Editor "A.R." Dear Sir,

As a comparative newcomer I do more listening than talking (I hope), and a few of the old hands seem to think that one of the reasons the lower frequency bands still have room for some more calls are "lazy". Yes "lazy" is the word used by them.

Most of our Z cells are young chaps who have the ability to obtain their full license. But why don't they obtain it? Once they get on the air so many seem content to stay a Z. What boost they could give to the lower frequencies!

Perhaps the young chaps hasn't the cash? Is it more fun? I don't know the reason for staying with a limited license. It has been suggested to me that the limited license be made current for one year only to ensure that the full license is taken up.

What do others think?

—Peter W. Brown, VK4PZ

HALLICRAFTERS COMMUNICATION EQUIPMENT

Agents are to be appointed for this very fine range of equipment for the following States: Queensland, Victoria, Western Australia, South Australia, Tasmania, and Northern Territory.

A good knowledge of import procedures would be an advantage, but not a necessity.

Write for information to the Hallicrafters' representative:

W.F.S. ELECTRONIC SUPPLIES CO.

227 Victoria Road, Rydalmer, N.S.W.

TEST EQUIPMENT

Famous E.I.C.O. brand Kits now available in Australia

G.D.O.

This is a piece of equipment that should be in every shack. The multitude of uses to which it can be put are too numerous to print. Ask the chap who has one, he will tell you he wouldn't be without one. Take the gueswork out of the gear you build and save yourself time. The E.I.C.O. G.D.O. has a frequency range of 400 Kc. to 250 Mc. in eight factory-wound coils which are wound to 0.5% accuracy on polystyrene formers. Variable sensitivity control. 500 μ A. meter and phone jack for listening to zero beat 240-volt operation. £27/10/- including sales tax.

V.T.V.M.

Peak-to-Peak V.T.V.M. with a large 7" meter. ONE probe handles D.C., A.C. and Ohms Measures directly P.P. voltages of complex and sine waves, 0-4, 14, 42, 140, 420, 1,400, and 4,200 volts. D.C./R.M.S. sine voltage 0-1.5, 5, 15, 50, 150, 500 and 1,500 volts. Ohms 0-1,000 Megs in seven ranges. 240-volt operation. £31/7/6 including sales tax.

CRYSTALS.

Brand new type FX-1 Crystals made by International Crystal Manufacturing Co., U.S.A. The Crystals are 0.75" high, 0.75" wide, 0.375" deep. Pins are 0.25" long and spaced 0.5" apart. Ceramic sockets are supplied with each Crystal

1,000 Kc.—Accuracy 0.005%—£6/0/0 plus sales tax.
1,500 Kc.—Accuracy 0.01%—£4/16/0 plus sales tax.
3,500 Kc.—Accuracy 0.005% - £3/18/0 plus sales tax.

All goods despatched Free of Charge by Registered Post. Be sure to include your full address and Money Order or Cheque with your order.

MAIL ORDERS ONLY-NO CALLERS PLEASE

Other items in the E.I.C.O. range are available, as are Crystals of other types and frequencies. Your enquiries will receive prompt attention.

TRANSTRONIC PRODUCTS

123 BALGOWLAH ROAD, FAIRLIGHT, SYDNEY, N.S.W.

SIDEBAND

Bud Pounsett, VK2AQJ
6 Alice Street, Queanbeyan, N.S.W.

SINGLE SIDEBAND 40 YEARS AGO

We hear a lot of comment on the bands and in various journals about this "new" technique "Single Sideband." In Australia, s.s.b. might be called new to the Amateur bands if sometimes that goes back over a decade to be termed "new."

A little research into the history of s.s.b. brought to light some very interesting facts. The man to whom the credit of discovering the possibilities of single sideband must go, is John R. Carson, the U.S.A. who submitted a paper to the 1912 G.I.T. Conference on the idea of transmitting only one sideband. The composition of an amplitude modulated signal had been established mathematically about a year earlier in 1911. That is, that it consisted of a carrier plus two identical sidebands.

However, as often is the case, the theory was established, but the practicalities of the art was not sufficiently advanced to bring a single sideband system into being. At this time (1912), the United States Navy was conducting research to note that a form of s.s.b. was obtainable during transmission at such a very low frequency used made it possible to detune the antenna sufficiently to pass one sideband well and attenuate the other. This was carried out at the famous U.S.N. radio station, NAA, at Arlington, Virginia.

Experiments were carried out in 1923 in Atlantic communication using s.s.b. with a pilot carrier on a frequency of 87 kc. These experiments culminated in the Trans-Atlantic public radio-telephone using s.s.b. in 1927. By 1932, s.s.b. had come to the amateur using on a crystal controlled oscillator circuit and we can make of the high frequency spectrum. Independent sideband and multiplexing was further developed until today a very high standard of communications has been reached.

But what of Amateur participation?

As early as 1923 Robert Moore, WEDEI built and operated an s.s.b. transmitter in the Amateur bands and in 1934, half a dozen Amateurs in the U.S.A. were using s.s.b. However, it was slow and it was not until after World War II, that the pace began to quicken. Today we are well aware of the fact that sideband has arrived to stay. In fact it arrived years ago but only a few noticed it and took advantage of all that it has to offer.

VK2ON TRANSMITTER (Part 5)

The first linear stage there are three of them with a GAG7 in Class AB1. Plenty of output is obtained to drive an EL30 g.g. which excites the antenna. A variable bias is applied. A volume control is used in the form of variable bias to the GAG7. This varies from 1-10 volts. A voltage applied to the test point *tst* (top) tells when cut-off is being approached. The grid leak detector is connected. Reducing the gain here covers spurious responses and unwanted carrier level. The gain can be advanced to compensate for losses on the higher frequency bands.

GOING S.S.B.?

ASWEL AUDIO PHASE-SHIFT NETWORKS

Assembled and tested. Interchangeable with B. & W. 2Q4.
£3/3/0 plus 2/6 reg. postage.



Write for details.

D. POLLARD
17 Clarendon Av., Canterbury, N.S.W.
Telephone: UW 5368

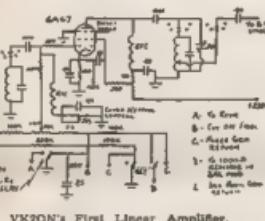
The extra netting control is used when the netting signal is not sufficient. It could be combined with the netting switch of course. A shield across the bottom of the GAG7 socket is necessary. The 0.01 μF . by-passing disc ceramic is connected by very short leads to the antenna and ground. The tuning circuit has about 123 pF. total capacity for 80 metres, 78 pF. for 40, 35 pF. for 20, and 20 pF. for 15 and 10 metres. The cathode tap for the following grounded grid EL38 valve is carefully adjusted on each coil.

A small variation here can alter the power transmission greatly. The last section being 19 and 20 pF. of total turns and from earth end. The 0.01 μF . output condenser is only to isolate a germanium diode metering circuit in the next chassis. Such an r.f. indicator could be used in the exciter chassis, of course. The band switches are all ganged although shown separate on the diagram.

Class AB1 operation is used to obtain more output, up to 5-10 watts if required. Only a small current is needed, however, to drive the EL38.

The screen voltage exceeds 150 volts, the net maximum. The GAG7 does not appear to mind this. The 109A exciter has a master circuit and 300 volts is used so it is amazing what that tube will stand! In grounded grid operation, a plate voltage of 300 does no harm.

The following two linear stages are housed in a separate box, a BC275 chassis, and it is hoped to describe these in next month's issue.





POWER TRANSFORMERS AND CHOKES

FOR TRANSMITTER AND/OR MODULATOR POWER SUPPLIES

Full
Specifications
Featured
in the
A & R
TRANSFORMER
LEAFLET
Ask your
Stockist
for a Copy!

POWER TRANSFORMERS

TYPE PT1870.—Primary 230 or 240 volts to high, medium or low taps (Overwound primary). Suitable for switching with non-shorting contacts. Secondary 1, 850, 750 or 600 volts per side of c.t., depending on primary tap selected. D.C. load current 200 mA. continuous or 250 mA. part intermittent with choke input filter. Secondary 2-45 to 6 volts at 0.3 amp for pilot lamp. For use with SR4GY rectifier, choke input filter.

TYPE PT1400.—Primary 200, 220, 230, 240 volts. Secondary: 565, 500, 425 volts per side of c.t., 250 mA. condenser input filter. Filaments: 2 x 6.3v. (3a.), 2 x 2.5v. (3a.), 3v (3a.) Horizontal mounting.

TYPE PT1371.—Primary 200, 220, 230, 240 volts. Secondary, 1000, 850, 750, 600, 500 volts per side of c.t. 300-400 mA. choke input filter

TYPE PT1305.—Primary 200, 220, 230, 240 volts. Secondary, 2.5 c.t. 10a. for 2 x 866/A filos. Max: D.C. wkg. 3000 volts.

TYPE PT1516.—5 v. at 3 a., 1000 v. D.C. working. For use with n.t. power supply and high-level negative peak clipper filament voltage

POWER CHOKES

TYPE Z3044.—12 Henrys 200 mA. D.C. resistance = 165 ohms.

TYPE Z3045.—10 Henrys 250 mA. D.C. resistance = 130 ohms.

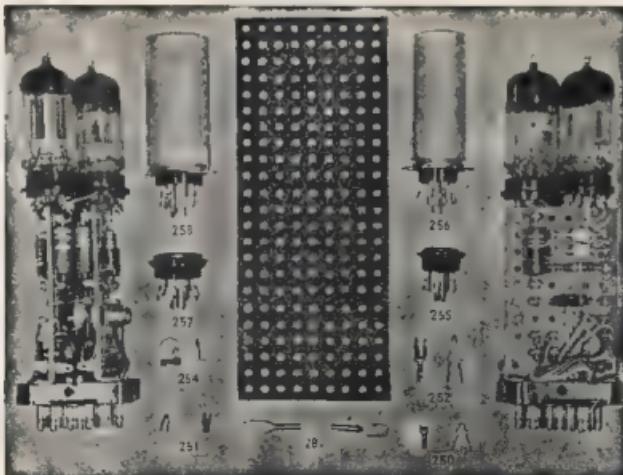
TYPE Z3046.—10 Henrys 300 mA. D.C. resistance = 90 ohms.

TYPE Z3047.—5-15 Henrys 250-50 n.A. D.C. resistance = 70 ohms

A. & R. ELECTRONIC EQUIPMENT CO. PTY. LTD. 378 St. Kilda Road, Melbourne, S.C.T. MX 1150.

REDUCE THE SIZE AND COST OF YOUR NEW EQUIPMENT

TYPICAL
UNITS
USING
ZEPHYR
MATRIX
SYSTEM



Leaflets and
Price List available
from all
leading Wholesalers



Enquiries invited
from
Manufacturers

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VIC.
Phones: BL 1300, BL 4556

V H F

David Tanner, VK3AAU
17 Wolseley Street,
Mont Albert, Vic.

Apparently things on the v.h.f. scene have worsened somewhat since last month, as I have very little news to offer. This may be because I left for some holidays the day after the deadline. My apologies to those who sent news which was too late for me to include.

As promised last month, I have a list of new v.h.f. stations for you. Most of the numbers of call areas worked. For example, VK2, VK3, VK4, etc., all count as different call areas. The W.A.S. and A.J.D. are not necessarily confirmed. Once again please send me any omission or errors.

Call Sign	Area	Class
VK3AW	20	A.J.D.
VK3AWQ	5	
VK3KK	19	A.J.D.
VK3STN	8	
VK3SQZ	5	
VK3EK	14	W.A.S.
VK3VQ	3	
VK3ARO	22	A.J.D., VR3
VK3SQZ	5	W.A.S.
VK3WX	14	
VK3BG	21	A.J.D. W.A.S.
VK3VR	14	A.J.D. W.A.S., KH6
VK3AMK	23	A.J.D. W.A.S., KH6, VR3
VK3S2X	11	A.J.D. W.A.S.
VK3LZ	14	
VK3JALZ	21	XE
VK3VQ	26	
VK3ATY	16	KH6
VK3AAU	31	KH6

That is all we have at the moment, but you can now see the sort of information we are after.

Here is some news from South Australia by courtesy of AJ EZCR. 6 was open to VK6 on Sept. 1 during the day, but no contacts were made. Once again the elusive GRV was heard. This coincides with the 27-day period from the previous opening.

Every evening between 1900 and 2100 SSTN on 144 Mc. over a distance of about 180 miles. I believe they have also done it on 50 Mc. too. Mick is further from the Lefty Ranges than anyone else. At complain that although he himself has been heard on 144, 50, 100, 150, 200, 250, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500, 2600, 2700, 2800, 2900, 3000, 3100, 3200, 3300, 3400, 3500, 3600, 3700, 3800, 3900, 4000, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4800, 4900, 5000, 5100, 5200, 5300, 5400, 5500, 5600, 5700, 5800, 5900, 6000, 6100, 6200, 6300, 6400, 6500, 6600, 6700, 6800, 6900, 7000, 7100, 7200, 7300, 7400, 7500, 7600, 7700, 7800, 7900, 8000, 8100, 8200, 8300, 8400, 8500, 8600, 8700, 8800, 8900, 9000, 9100, 9200, 9300, 9400, 9500, 9600, 9700, 9800, 9900, 10000, 10100, 10200, 10300, 10400, 10500, 10600, 10700, 10800, 10900, 11000, 11100, 11200, 11300, 11400, 11500, 11600, 11700, 11800, 11900, 12000, 12100, 12200, 12300, 12400, 12500, 12600, 12700, 12800, 12900, 13000, 13100, 13200, 13300, 13400, 13500, 13600, 13700, 13800, 13900, 14000, 14100, 14200, 14300, 14400, 14500, 14600, 14700, 14800, 14900, 15000, 15100, 15200, 15300, 15400, 15500, 15600, 15700, 15800, 15900, 16000, 16100, 16200, 16300, 16400, 16500, 16600, 16700, 16800, 16900, 17000, 17100, 17200, 17300, 17400, 17500, 17600, 17700, 17800, 17900, 18000, 18100, 18200, 18300, 18400, 18500, 18600, 18700, 18800, 18900, 19000, 19100, 19200, 19300, 19400, 19500, 19600, 19700, 19800, 19900, 20000, 20100, 20200, 20300, 20400, 20500, 20600, 20700, 20800, 20900, 21000, 21100, 21200, 21300, 21400, 21500, 21600, 21700, 21800, 21900, 22000, 22100, 22200, 22300, 22400, 22500, 22600, 22700, 22800, 22900, 23000, 23100, 23200, 23300, 23400, 23500, 23600, 23700, 23800, 23900, 24000, 24100, 24200, 24300, 24400, 24500, 24600, 24700, 24800, 24900, 25000, 25100, 25200, 25300, 25400, 25500, 25600, 25700, 25800, 25900, 26000, 26100, 26200, 26300, 26400, 26500, 26600, 26700, 26800, 26900, 27000, 27100, 27200, 27300, 27400, 27500, 27600, 27700, 27800, 27900, 28000, 28100, 28200, 28300, 28400, 28500, 28600, 28700, 28800, 28900, 29000, 29100, 29200, 29300, 29400, 29500, 29600, 29700, 29800, 29900, 30000, 30100, 30200, 30300, 30400, 30500, 30600, 30700, 30800, 30900, 31000, 31100, 31200, 31300, 31400, 31500, 31600, 31700, 31800, 31900, 32000, 32100, 32200, 32300, 32400, 32500, 32600, 32700, 32800, 32900, 33000, 33100, 33200, 33300, 33400, 33500, 33600, 33700, 33800, 33900, 34000, 34100, 34200, 34300, 34400, 34500, 34600, 34700, 34800, 34900, 35000, 35100, 35200, 35300, 35400, 35500, 35600, 35700, 35800, 35900, 36000, 36100, 36200, 36300, 36400, 36500, 36600, 36700, 36800, 36900, 37000, 37100, 37200, 37300, 37400, 37500, 37600, 37700, 37800, 37900, 38000, 38100, 38200, 38300, 38400, 38500, 38600, 38700, 38800, 38900, 39000, 39100, 39200, 39300, 39400, 39500, 39600, 39700, 39800, 39900, 40000, 40100, 40200, 40300, 40400, 40500, 40600, 40700, 40800, 40900, 41000, 41100, 41200, 41300, 41400, 41500, 41600, 41700, 41800, 41900, 42000, 42100, 42200, 42300, 42400, 42500, 42600, 42700, 42800, 42900, 43000, 43100, 43200, 43300, 43400, 43500, 43600, 43700, 43800, 43900, 44000, 44100, 44200, 44300, 44400, 44500, 44600, 44700, 44800, 44900, 45000, 45100, 45200, 45300, 45400, 45500, 45600, 45700, 45800, 45900, 46000, 46100, 46200, 46300, 46400, 46500, 46600, 46700, 46800, 46900, 47000, 47100, 47200, 47300, 47400, 47500, 47600, 47700, 47800, 47900, 48000, 48100, 48200, 48300, 48400, 48500, 48600, 48700, 48800, 48900, 49000, 49100, 49200, 49300, 49400, 49500, 49600, 49700, 49800, 49900, 50000, 50100, 50200, 50300, 50400, 50500, 50600, 50700, 50800, 50900, 51000, 51100, 51200, 51300, 51400, 51500, 51600, 51700, 51800, 51900, 52000, 52100, 52200, 52300, 52400, 52500, 52600, 52700, 52800, 52900, 53000, 53100, 53200, 53300, 53400, 53500, 53600, 53700, 53800, 53900, 54000, 54100, 54200, 54300, 54400, 54500, 54600, 54700, 54800, 54900, 55000, 55100, 55200, 55300, 55400, 55500, 55600, 55700, 55800, 55900, 56000, 56100, 56200, 56300, 56400, 56500, 56600, 56700, 56800, 56900, 57000, 57100, 57200, 57300, 57400, 57500, 57600, 57700, 57800, 57900, 58000, 58100, 58200, 58300, 58400, 58500, 58600, 58700, 58800, 58900, 59000, 59100, 59200, 59300, 59400, 59500, 59600, 59700, 59800, 59900, 60000, 60100, 60200, 60300, 60400, 60500, 60600, 60700, 60800, 60900, 61000, 61100, 61200, 61300, 61400, 61500, 61600, 61700, 61800, 61900, 62000, 62100, 62200, 62300, 62400, 62500, 62600, 62700, 62800, 62900, 63000, 63100, 63200, 63300, 63400, 63500, 63600, 63700, 63800, 63900, 64000, 64100, 64200, 64300, 64400, 64500, 64600, 64700, 64800, 64900, 65000, 65100, 65200, 65300, 65400, 65500, 65600, 65700, 65800, 65900, 66000, 66100, 66200, 66300, 66400, 66500, 66600, 66700, 66800, 66900, 67000, 67100, 67200, 67300, 67400, 67500, 67600, 67700, 67800, 67900, 68000, 68100, 68200, 68300, 68400, 68500, 68600, 68700, 68800, 68900, 69000, 69100, 69200, 69300, 69400, 69500, 69600, 69700, 69800, 69900, 70000, 70100, 70200, 70300, 70400, 70500, 70600, 70700, 70800, 70900, 71000, 71100, 71200, 71300, 71400, 71500, 71600, 71700, 71800, 71900, 72000, 72100, 72200, 72300, 72400, 72500, 72600, 72700, 72800, 72900, 73000, 73100, 73200, 73300, 73400, 73500, 73600, 73700, 73800, 73900, 74000, 74100, 74200, 74300, 74400, 74500, 74600, 74700, 74800, 74900, 75000, 75100, 75200, 75300, 75400, 75500, 75600, 75700, 75800, 75900, 76000, 76100, 76200, 76300, 76400, 76500, 76600, 76700, 76800, 76900, 77000, 77100, 77200, 77300, 77400, 77500, 77600, 77700, 77800, 77900, 78000, 78100, 78200, 78300, 78400, 78500, 78600, 78700, 78800, 78900, 79000, 79100, 79200, 79300, 79400, 79500, 79600, 79700, 79800, 79900, 80000, 80100, 80200, 80300, 80400, 80500, 80600, 80700, 80800, 80900, 81000, 81100, 81200, 81300, 81400, 81500, 81600, 81700, 81800, 81900, 82000, 82100, 82200, 82300, 82400, 82500, 82600, 82700, 82800, 82900, 83000, 83100, 83200, 83300, 83400, 83500, 83600, 83700, 83800, 83900, 84000, 84100, 84200, 84300, 84400, 84500, 84600, 84700, 84800, 84900, 85000, 85100, 85200, 85300, 85400, 85500, 85600, 85700, 85800, 85900, 86000, 86100, 86200, 86300, 86400, 86500, 86600, 86700, 86800, 86900, 87000, 87100, 87200, 87300, 87400, 87500, 87600, 87700, 87800, 87900, 88000, 88100, 88200, 88300, 88400, 88500, 88600, 88700, 88800, 88900, 89000, 89100, 89200, 89300, 89400, 89500, 89600, 89700, 89800, 89900, 90000, 90100, 90200, 90300, 90400, 90500, 90600, 90700, 90800, 90900, 91000, 91100, 91200, 91300, 91400, 91500, 91600, 91700, 91800, 91900, 92000, 92100, 92200, 92300, 92400, 92500, 92600, 92700, 92800, 92900, 93000, 93100, 93200, 93300, 93400, 93500, 93600, 93700, 93800, 93900, 94000, 94100, 94200, 94300, 94400, 94500, 94600, 94700, 94800, 94900, 95000, 95100, 95200, 95300, 95400, 95500, 95600, 95700, 95800, 95900, 96000, 96100, 96200, 96300, 96400, 96500, 96600, 96700, 96800, 96900, 97000, 97100, 97200, 97300, 97400, 97500, 97600, 97700, 97800, 97900, 98000, 98100, 98200, 98300, 98400, 98500, 98600, 98700, 98800, 98900, 99000, 99100, 99200, 99300, 99400, 99500, 99600, 99700, 99800, 99900, 100000, 100100, 100200, 100300, 100400, 100500, 100600, 100700, 100800, 100900, 101000, 101100, 101200, 101300, 101400, 101500, 101600, 101700, 101800, 101900, 102000, 102100, 102200, 102300, 102400, 102500, 102600, 102700, 102800, 102900, 103000, 103100, 103200, 103300, 103400, 103500, 103600, 103700, 103800, 103900, 104000, 104100, 104200, 104300, 104400, 104500, 104600, 104700, 104800, 104900, 105000, 105100, 105200, 105300, 105400, 105500, 105600, 105700, 105800, 105900, 106000, 106100, 106200, 106300, 106400, 106500, 106600, 106700, 106800, 106900, 107000, 107100, 107200, 107300, 107400, 107500, 107600, 107700, 107800, 107900, 108000, 108100, 108200, 108300, 108400, 108500, 108600, 108700, 108800, 108900, 109000, 109100, 109200, 109300, 109400, 109500, 109600, 109700, 109800, 109900, 110000, 110100, 110200, 110300, 110400, 110500, 110600, 110700, 110800, 110900, 111000, 111100, 111200, 111300, 111400, 111500, 111600, 111700, 111800, 111900, 112000, 112100, 112200, 112300, 112400, 112500, 112600, 112700, 112800, 112900, 113000, 113100, 113200, 113300, 113400, 113500, 113600, 113700, 113800, 113900, 114000, 114100, 114200, 114300, 114400, 114500, 114600, 114700, 114800, 114900, 115000, 115100, 115200, 115300, 115400, 115500, 115600, 115700, 115800, 115900, 116000, 116100, 116200, 116300, 116400, 116500, 116600, 116700, 116800, 116900, 117000, 117100, 117200, 117300, 117400, 117500, 117600, 117700, 117800, 117900, 118000, 118100, 118200, 118300, 118400, 118500, 118600, 118700, 118800, 118900, 119000, 119100, 119200, 119300, 119400, 119500, 119600, 119700, 119800, 119900, 120000, 120100, 120200, 120300, 120400, 120500, 120600, 120700, 120800, 120900, 121000, 121100, 121200, 121300, 121400, 121500, 121600, 121700, 121800, 121900, 122000, 122100, 122200, 122300, 122400, 122500, 122600, 122700, 122800, 122900, 123000, 123100, 123200, 123300, 123400, 123500, 123600, 123700, 123800, 123900, 124000, 124100, 124200, 124300, 124400, 124500, 124600, 124700, 124800, 124900, 125000, 125100, 125200, 125300, 125400, 125500, 125600, 125700, 125800, 125900, 126000, 126100, 126200, 126300, 126400, 126500, 126600, 126700, 126800, 126900, 127000, 127100, 127200, 127300, 127400, 127500, 127600, 127700, 127800, 127900, 128000, 128100, 128200, 128300, 128400, 128500, 128600, 128700, 128800, 128900, 129000, 129100, 129200, 129300, 129400, 129500, 129600, 129700, 129800, 129900, 130000, 130100, 130200, 130300, 130400, 130500, 130600, 130700, 130800, 130900, 131000, 131100, 131200, 131300, 131400, 131500, 131600, 131700, 131800, 131900, 132000, 132100, 132200, 132300, 132400, 132500, 132600, 132700, 132800, 132900, 133000, 133100, 133200, 133300, 133400, 133500, 133600, 133700, 133800, 133900, 134000, 134100, 134200, 134300, 134400, 134500, 134600, 134700, 134800, 134900, 135000, 135100, 135200, 135300, 135400, 135500, 135600, 135700, 135800, 135900, 136000, 136100, 136200, 136300, 136400, 136500, 136600, 136700, 136800, 136900, 137000, 137100, 137200, 137300, 137400, 137500, 137600, 137700, 137800, 137900, 138000, 138100, 138200, 138300, 138400, 138500, 138600, 138700, 138800, 138900, 139000, 139100, 139200, 139300, 139400, 139500, 139600, 139700, 139800, 139900, 140000, 140100, 140200, 140300, 140400, 140500, 140600, 140700, 140800, 140900, 141000, 141100, 141200, 141300, 141400, 141500, 141600, 141700, 141800, 141900, 142000, 142100, 142200, 142300, 142400, 142500, 142600, 142700, 142800, 142900, 143000, 143100, 143200, 143300, 143400, 143500, 143600, 143700, 143800, 143900, 144000, 144100, 144200, 144300, 144400, 144500, 144600, 144700, 144800, 144900, 145000, 145100, 145200, 145300, 145400, 145500, 145600, 145700, 145800, 145900, 146000, 146100, 146200, 146300, 146400, 146500, 146600, 146700, 146800, 146900, 147000, 147100, 147200, 147300, 147400, 147500, 147600, 147700, 147800, 147900, 148000, 148100, 148200, 148300, 148400, 148500, 148600, 148700, 148800, 148900, 149000, 149100, 149200, 149300, 149400, 149500, 149600, 149700, 149800, 149900, 150000, 150100, 150200, 150300, 150400, 150500, 150600, 150700, 150800, 150900, 151000, 151100, 151200, 151300, 151400, 151500, 151600, 151700, 151800, 151900, 151000, 151100, 151200, 151300, 151400, 151500, 151600, 151700, 151800, 151900, 152000, 152100, 152200, 152300, 152400, 152500, 152600, 152700, 152800, 152900, 153000, 153100, 153200, 153300, 153400, 153500, 153600, 153700, 153800,

DURALUMIN, ALUMINIUM ALLOY TUBING

IDEAL FOR BEAM AERIALS AND T.V.

★ LIGHT ★ STRONG ★ NON-CORROSIVE
STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS $\frac{1}{2}$ TO 3"

Price List on Request

STOCKISTS OF SHEETS--ALL SIZES AND GAUGES

GUNNERSEN ALLEN METALS PTY. LTD.

88-92 YARRA BANK RD.,
STH. MELBOURNE, VIC.



Phone: 68-2121 (10 lines)
Telegrams: "Metals," Melb.

HANSON ROAD,
WINGFIELD, S.A.

Phone: 4-3362 (4 lines)
Telegrams: "Metals," Adel.

CHOOSE THE BEST—IT COSTS NO MORE



O. T. LEMPIERRE & CO. LIMITED

Head Office: 27-41 Bowden Street, Alexandria NSW
and at Melbourne • Brisbane • Adelaide • Perth

AMATEURS
FOR THE BEST RESULTS
USE

IRONCORE

- ★ POWER TRANSFORMERS AND CHOKES
- ★ BATTERY CHARGERS.
- ★ SCOPE AND ORYX IRON TRANSFORMERS.
- ★ STEPDOWN TRANSFORMERS.

IRONCORE TRANSFORMERS PTY. LTD.

HIGSON LANE, MELBOURNE, C.1

Phone: 63-4771

PREDICTION CHART, OCT. '61

Mc.	E. AUSTRALIA	W. EUROPE	S.E.	45
0	2	4	8	10 12 14 16 18 20 22 24
28	—	—	—	45
21	—	—	—	35
14	—	—	—	25
7	—	—	—	15

E. AUSTRALIA — W. EUROPE L.R.

Mc.	E. AUSTRALIA	W. EUROPE	L.R.	45
0	2	4	8	10 12 14 16 18 20 22 24
28	—	—	—	45
21	—	—	—	35
14	—	—	—	25
7	—	—	—	15

E. AUSTRALIA — MEDITERRANEAN

Mc.	E. AUSTRALIA	MEDITERRANEAN	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

E. AUSTRALIA — N.W. U.S.A.

Mc.	E. AUSTRALIA	N.W. U.S.A.	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

E. AUSTRALIA — N.E. U.S.A. S.H.

Mc.	E. AUSTRALIA	N.E. U.S.A. S.H.	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

E. AUSTRALIA — N.E. U.S.A. L.R.

Mc.	E. AUSTRALIA	N.E. U.S.A. L.R.	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

E. AUSTRALIA — CENTRAL AMERICA

Mc.	E. AUSTRALIA	CENTRAL AMERICA	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

E. AUSTRALIA — S. AFRICA

Mc.	E. AUSTRALIA	S. AFRICA	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

E. AUSTRALIA — FAR EAST

Mc.	E. AUSTRALIA	FAR EAST	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

W. AUSTRALIA — W. EUROPE

Mc.	W. AUSTRALIA	W. EUROPE	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

W. AUSTRALIA — N.E. U.S.A.

Mc.	W. AUSTRALIA	N.E. U.S.A.	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

W. AUSTRALIA — S. AFRICA

Mc.	W. AUSTRALIA	S. AFRICA	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

W. AUSTRALIA — FAR EAST

Mc.	W. AUSTRALIA	FAR EAST	45
0	2	4	8
28	—	—	—
21	—	—	—
14	—	—	—
7	—	—	—

NOTES

FEDERAL QSL BUREAU

BILL Hansen, ex-VK0BNY, has had his cards printed and these will be distributed to approx 400 stations during September and October. Bill is now en route to S.M.A. for a two-year spell with the VK Armed Forces.

Ray LASHEM, operator on the T.T. Beaumont, was giving a QTH at the Coburg Exhibition at South Melbourne, was again at Geelong Sept. 7/8. The ship stayed only 24 hours this trip as Ray was unable to get into Melbourne. He sends his best regards and thanks to the VK Radio crew for their kindness to him. It will be his last trip on this vessel.

The T.O.P.S. is staging an 80 metre activity contest from 1200s Dec. 16 to 1200s Dec. 17.

This is the last attempt at holding this contest because the activity is evident it is open to all Hams.

Head on 14080 kc. BY1PK giving QTH as Peking and name Liang. Gave QSL address as Box 427, Peking, and only QSOed USA stations.

—Ray Jones, VK3RJ Manager.

NEW SOUTH WALES

The August general meeting of the Division saw a disappointing attendance, more especially since a most interesting lecture was scheduled for the evening. Harold E. Edwards of University of N.S.W., gave an absorbing discourse on the many types of antennae which have been designed over the years, giving their characteristics and in many cases their shortcomings. Many questions were asked and the lecturer, indicating the interest taken in his subject, The President, Bill TYL, called on a visitor, Noel ZAHM, to propose the vote of thanks.

Owing to the lack of a quorum, no business was conducted, but a discussion was held on several subjects of Divisional interest.

The mid-monthly meetings, which the Division has been conducting for some time, for the benefit of members, will continue to be held on a monthly basis. The last of them will have been held in September. It will be realised that the task of arranging such functions as these is an arduous one, and we feel that Harold ZAHM is to be complimented on the work that he has provided during the past.

TAPED LECTURES

All clubs and groups are requested to avail themselves of this free service, only return postage for the tape is required, and use this fine collection of tapes, which Harold has organised for your benefit.

We would bring to mind the following tapes: Remote Control and Supervisory Equipment, Aircraft Navigational Aids, V.H.F. Omni-Range, all made by Peter Grimes, D.C.A.

If you are doubtful of the nature of these tapes, all they are all tapes made as a result of monthly meeting lectures. A line dropped to the Education Officer will describe their contents.

HUNTER BRANCH

Well, how did you enjoy the Convention? Now, after seeing all those nice mobile rigs, haven't you decided to build one for yourself? I haven't. I've been threatening for many moons to do just that, but I have never quite been finally convinced that it must be so for next year's "do". Just watch me. Did I hear someone say, "What about the AT3"? Anyway, I'm sure that all those who did manage to get along without themselves and those who were not there think what you missed!

The last meeting, by the way, was again very well attended, no doubt because of the drawcard. Yes, our old Duck Talk friend Leo was there, demonstrating his art of the many forms of generating a.b.s. It seems to me that Leo admits to knowing a great deal less about maths and physics than is really the case because some of the zero swapping that filled the air could only be a guess. Despite all this, those who pre-ferred always came out correctly. Those who preferred to be exponents of the gentle art of a.b.s. no doubt benefited greatly from what was said and lectures such as this one do a great deal of good in the

hobby. Congrats. on a job well done. Len. The night weather on this occasion was hardly any sort of reward, except for real ducks!

Twenty-three members and ten associates were present, among them quite a few faces we have not seen for some time. Special welcome to GUY LAWRENCE, 2AZGD, 2ZSC and Ken Woods, our new associate. At the conclusion of the meeting, a certain gent with a broad north country accent found himself unable to distinguish through his rain battered speech between returning members and a local. First parked in the rear of the building, I might mention it was the only one there, but Shannon, to whom I refer, decided to stand in the rain and below, as well as know how. This was done and was only fifteen minutes before the sheltering crew two hundred yards away. Yes, we rescued him.

At long last, those who are in charge of the call sign register have rewarded impatient members Gordon, Ian and David with some good news. Gordon became 2ZTSD, and we hope he's in reverse, Ian is 2AJF (I suppose he should be thankful to get one initial letter and an anglicised version of the other), and David — you'll never guess, I wrote yours and I signed a blank card and handed it back to him! Still this is better than getting it wrong, I suppose. David tells me he has been on with borrowed gear; as Gordon I have no news, and Ian has got away to a good start.

On Saturday, the first DX contest chaps had a shot at the R.D. Contest, but from what I could hear, most of the local boys had a go and Harold 2AHA, as usual, managed to get a good score. I haven't forgotten Chris 2PZ, Wayne and Lionel 2CZ and others, nor doubt quite a few others who I did not hear.

The mystery of the mighty signal reports given by Jim 2AHT is solved. Apparently this man has a two-stage pre-selector in front of the H.R.O. and according to authentic reports it kicks the signal along no end.

Ron 2ASJ has a fine QTH at Stockton with the benefit of ocean and land waves. It is the scene of a gathering of some of the boys a few weeks back. Object, to get Ron's 20 mx beam back into working order. Result, object achieved. Harold 2AJHA dreamt up the scheme and managed to assist him with Vaseline 2BF. Harry 2ANP and Noel 2ANM, Stuart 2AYF, Tony, Sid, Wal and yours truly. It would be true to say we all had a good time and our thanks to Mr. Stuart who dispensed much appreciated refreshments. Never heard so much activity in one day. The suggestion was made that the construction crew do the rounds and then we'd all have beams to the way, have you ever tried to work a foot key? Then go to Ron's some day and have your lesson. It's not so easy as you may think.

By this time you all should know how to improve the performance of your rx and if you want to learn more about what people build and whether or not it works, then come along to the next meeting. We have decided to take the form of a "do-it-yourself" night and you are assured of a good time and the chance for a look at some more interesting gear. Don't be superstitious, even though it is Friday 13th. That's the opening night of New Year University College, Tighe's Hill is where to go.

I am not making the admission that I arise early enough to hear them, but I am informed

OBITUARY

TED JENKINS VK3QK

It is with deep regret that the Federal Executive records the passing of Ted Jenkins, VK3QK, on 8th August, 1961, after a short illness.

Ted Jenkins was particularly well known in DX circles throughout the world, was active as an Amateur for over 20 years from his home in Elwood and also from his holiday home at Churchill Island in Western Port Bay.

As a result of an accident in his teens, his Radio Amateur activity provided that contact with others he was otherwise denied by this misfortune. His cheerful disposition and readiness at any time for a "chin-wag" endeared him to all who knew and visited him.

In the late forties he served for several years as Federal Contest Manager, and was one of the main forces in formulating the rules of the Remembrance Day Contest and the National Field Day Contest.

He will be sadly missed by his many friends outside of Amateur Radio as well as those he contacted over the air.

Our deepest sympathy is extended to his father and relations and to his life-long companion, Sister Campbell.

that the Count may now also be heard on 80 in the mornings. So that's what Mr. Ross was doing on that little girl's tv. Bob 2AQH was a movie man as well you know and I have it from a reliable source that he is having a cinematograph attachment put on the cameras. That's all I know that this is for self portraits.

Well, ta ta for now and don't forget the 13th. You'll bring your rabbit's foot, won't you. 2AKX

BLUE MOUNTAINS SECTION

The Annual monthly meeting was held at Lawson. Approximately members attended and visitors 2ZTSD and 2AFL were made welcome.

The date for the Blue Mountains Field Day has been fixed for 5th November at Lawson Showground. The programme consists of hideouts to hunts, lucky dips and other competitions for all. Look in the Bulletin for details.

Divisional councillor, Tim 2ZTM, dropped in on his way through to Newnes Junction. Tim outlined the latest developments regarding the new Divisional Building in Atchison Street, and it is expected to be finished some time in the new year. It appears that there is a lot of disposal equipment in the way of property and perhaps we may be able to get some more. Col 2AQH on 144 m.s. by the time this note is written should be receiving on 8 m.s. Tx is 223 modified, the xtal coming out at 147 odd. Rx is xtal locked converter and an eleven element yagi.

Ken 2AVN, Norm 2ARL and yours truly are setting up a 144 and 70 m.s. station for the bush fair and 144 m.s. communications. Doug 2INX and Wal 2MZ are already in business and Wal being the ring leader quite a few nights have been spent at Wal's place for constructional advice. Some 2ARL and 2GIO xtal converters were made available to the club and should prove useful around the shack.

Best of luck to Bob 2ASZ, who I heard putting up a big score in the R.D. Contest. He is reported everywhere in the radio club with the necessary log. Jack 2ADP is going on holidays next month and is now putting up his week-ends in on his car and leaving radio behind and heading for the sticks. Dave 2EN is in the middle of a lecture tour on Communications shorts and at present a car load of members will be present at Lawson to cheer him on on 13. SADA.

CENTRAL COAST ZONE

Preparations are under way to make the November Field Day at Gosford Waterfront another enjoyable outing for Hams from far and wide. Perhaps some of the new 2m men will be taking part in the tx hunts this year. John 2ZJT, Chuck 2NI, Major 2RU, Doug 2AFA and myself are looking forward to the fun with the occasional appearance of your scribe 2ON. Two of our members are operating with "two-point pots" in the coax line and as far as two points appear to cut out L.V.L. The dimensions for the two-point filter are given in a recent "QST". These models are constructed from g.t. downtime.

Alce 2AAG is investigating the virtues of g.t. operation in 81s with some success. He hopes to have his new house at Kuluura in 2AAE completed by just the end of the year. Reception good DX, orange trees and stray wallabies. Ken 2AFH and Frank 2AFJ will shortly be on two m.s. Reg 2AI has made more trips to VK1 and is keeping company of Alice while visiting Jo Broken Hill, Wangaratta, Alice Springs and Wagga. Gosford members were pleased to hear Ernie 2EH and Phil 2MN recently from Los Angeles via WAMFY (Martin) on sideband. We should see him back in Gosford soon after a trip to LA.

Remember Wednesday, 11th October - Gosford High School Science Exhibition, from 8 to 11 p.m. 2AFY, the Gosford Radio Club station will be operating on 40 and 80 m.s. Experiments with a.l.c. by the writer have brought forth some interesting results, chiefly on preventing false-hopping and getting up the normal bandwidth for the s.a.b. signal.

S.W. GROUP

We missed the press last month owing to a slight error but here we are again. There are a number of technical errors in the first half of the ART manual, but due to stand problems there is a slight delay in the production of the second batch, but all orders will be satisfied as soon as possible.

"IAN MACMILLAN" AMATEUR EQUIPMENT

We've been very busy sending out catalogues for our new range of Amateur Transmitters and Kits, and consider the response to be very encouraging.

Further to this, we'd like you to note that everyone who has received a catalogue is on the mailing list for additions, and alterations, and will receive these as a matter of course.

Now to business: here is a price list for some of our present range of equipment:

TX150 Transmitter Kit	£60/4/6
As above, less VFO	£49/8/6
TX75A Transmitter Kit	£51/3/9
As above, less VFO	£40/7/9
TX75B Transmitter Kit	£53/8/9
As above, less VFO	£42/3/2
Complete set sheet metal for TX150/75, including knobs, printed front panel, rubber feet, etc.	£15/6/0
Cabinet and Chassis com- plete, but undrilled	£10/2/2
P.A. Cage, suit any final, perforated steel, plated	£1/8/10

For full details of these and other equipment, send now for our free descriptive catalogue.

NEW EQUIPMENT— THE "UNIMOD"

A universal modulator for any transmitter using single or parallel 6146, 807 or 1625 tubes in the P.A., and suitable for use with many other final amplifiers with similar characteristics.

For use with a crystal microphone, the "Unimod" produces constant high level modulation without splatter.

Complete Kit, less tubes,
Price £7/4/4 inc. tax.

Uses one 12AX7, one 6C4, and one 12AT7.

A. M. MONK & SON PTY. LTD.
13 Verity St., Richmond, E.I., Vic.

Phone 42-5727
After hours 83-1347, 26-9714

We would like to draw members' attention to the fact that VK2 s.w.l. numbers issued at the time of joining the Division, a covering letter requesting such number is included in the application form.

Next month we hope to devote this space to details of members' gear and activities, if such information is forthcoming from you chaps—*Doug L2215*.

BOGORAGU HIGH SCHOOL RADIO CLUB
Good news first, Ian Forrest, a senior member of our club, has received his full call sign, 2AJF. I know he would appreciate a call, so if you hear him please give him a shout.

Friday, 11th August, 1961, was the School station and several others took part. Those in the net were from Queensland, Victoria and the Capital Territory as well as NSW. We were fortunate that conditions were good and all stations had fun. Mr. Saunders and Ian McMillan recommended Bogoragu and the radio club members did the "studio" management.

The club has been promoted some more by the V.L.A. Dissemination Committee and you may be sure that it will be put to good use. TS, Bruce, for 2ATZ.

ALBURY RADIO CLUB

Recently the club took in several new members, one from Melbourne, and a few interest in club activities. On June 9th the W.L.A. Correspondence Course was begun under the tutelage of Don HRS, and the club hopes to prepare these fellows for their licence by early 1962. Morse practice is also available to them each night.

Meetings of the club are at present being held in Don's shack and contacts on the bands are frequently made on meeting nights.

Geoff Amy recently received news of passing the examination for a Limited licence, no call sign allocated as yet. At the present time Geoff is busily engaged building his rig. The office-bearers of the club are: President, Herb 2QD; Secretary, Don HRS; Treasurer, Alf Bullock.

VICTORIA

Because the Radio Theatre is not available during term vacations, the September meeting was held a week earlier than usual. Perhaps this may be the reason that our attendance, however, those who did come heard a very informative lecture by Jack SW2 on the art, science and trickery of 80 m. tx hunting. After covering the technical and practical aspects of the hobby, Jack demonstrated his "sniffers" and rx requirements. Jack, with the assistance of the other huntresses present, reminisced about some of the outstanding hunts of recent years. There was the baby in the pram, trials the bend in the river river, Warrnambool, and many more, culminating in the microwatt tx swindle perpetrated by the lecturer himself at the last outing.

Pieces of equipment on display were described by their proud owners. David 2AKL, Alan 2JCF, Michael 2CZ, Keith 3VQ and Jack himself. Syd JASC drew the maps with unexpected skill. Judging by the questions asked and the notes taken, there will be some new starters in future. Jack pointed out that this year members will require a licence except for the one who hides the tx, therefore associate members may take part. It is not necessary to have a tx or expensive gear. If you have a car, an 80 m. rx, such as a receiver, and the normal amount of Ham in genuinity, you can enjoy a phase of Amateur Radio which is quite different from the usual activities and take the family for a social outing as well. This talk was interesting and not at all amusing. Thanks Jack and all who helped.

The President welcomed Rolf Haggbom, an ex-OH who is now living at Altona and operates mainly on 7 Mc. c.w. with the call 3ACD. At the same meeting on the 2nd Wednesday in October, George 3AHN will give a talk with the intriguing title "The Other Side of Photography." He will also screen two films, one concerning the use of high speed photography to study rapid movements, the other on eye bounces and picture tube implosions, and the other about lens manufacture. Many Amateurs are also involved in photography or astronomy these days so come along to the Radio Theatre, Royal Melbourne Institute of Technology to hear George's lecture. It will be good.—*ZAEZL*.

SOUTH WESTERN ZONE

Conditions have been in and out over the last few weeks; having received no news, the doings recorded are only local. One strange signal heard on 7 Mc. band signing SRA is

QSO with JPX, also heard Dr later giving the c.w. a no, not so long ago DR was telling me he was too busy—things must be easing up a bit. John 2AGD and Kevin 3AKR have been over to JPX for a conference on Bush Fire Radio. They had portables but have not heard how they want.

This looks like stealing David's thunder, but could anyone tell me why the 3 m. stations in the scramble come on the air and disappear at 2015? I sometimes hear Iron Man at 1945 and comes down as soon as the scramble is over. Plenty of rigs during the scramble, but before and after silence reigns supreme and now!

St. Kilda is very lively here with two new stations on the band—Wally 3UT and Lindsay 3ZKL, a new Ham. Welcome to the ranks Lindsay, your modulation really shows some of the older chaps how it is done. 3UT, the trials, the tests, the telling off, all about the wasted power by telling accents in turn tells all and sundry he is using a 7CS in the final, running 10 watts, as the final in the 6 m. rig. Wally, what a waste of power, why not try 3UT and leave the wasteful tube to the in-hoppers.

Congrats go to Bill 3ZFG who will have lost the Z with a brand new call he is wasting for T.V. just about conquered here with a m.m. rig. Now, get that Mc. rock on the fundamental, and I expect to see you early next year. All I want now is a few beers south west.—TS, SANQ.

MOROOGAN AND DISTRICT RADIO CLUB
Since last written notice of "A.R.C." final arrangements have been made for the portable operating under their new call sign of 3APC/P on the week-end of October 21 and 22 at Clifford Park, near Croydon, Vic., in connection with the Scouts Jamboree-on-the-Air.

29, 40 and 80 m. as well as 2 m. operation attempted and we would be very grateful to any Australian who would come throughout Australia to contact us on that week-end. Twenty and 80 m. will be operated back to hand in a marquee near the scene of most of the Scout activities, and will be manned by Bob 3BZ, Andrew 3BL, Ken JACS and other members. Forty and 20 m. operation is envisaged from a high knoll in the grounds where the arch was erected for the late World Jamboree a little further away from general habitation. The site is owned by Alf 3CL, Harold 3AFG, Peter 3APD and other members. It will be interesting to see how we do on 2 m. and I must urge the v.h.f. boys to keep their beams pointed towards Croydon. Operation will commence on Saturday morning and go through until afternoon, that is, Sat Oct. 21 and Sunday Oct. 22.

As well as the Jamboree-on-the-Air, this gathering at Clifford Park, where there will be some 500 young Scouts, will also be designated "The Melbourne Gathering" and is a yearly affair. The Scouts compete among themselves and are taught many interesting Scoutish games such as climbing, archery, rock climbing, etc. and this year a special obstacle event is being staged. Look out for 3APC/Fairbairn boys 73, 3LC.

QUEENSLAND

How did you get on in the R.D. Contest? I hope you forwarded your qualifying log to do the right thing for your interests. The most interesting item I have to report is that on Friday, 11th August, we had a full Council of 12 members meeting at my QTH for the usual monthly meeting. Quite a lot of business was transacted and one of the items was to report that all business was completed. Secretary Bill 4WS has a growing pile of correspondence (we have obtained for him a nice new satchel), which would take most of the day to read completely and which was dealt with. Treasurer Keith 4ED was doing eye roving about, but nobody was going to show any money. Keith is going to be the tightest treasurer I've known for some time. Council approved "Radio Propagation and Theory" for our October meeting of "Radio Propagation and Recent Research" for November, so arrangements will be completed for that as soon as possible.

There is a proposal afoot to dispose of equipment that is surplus to requirements and to buy equipment that could be used by country branches. This will not be done overnight, so don't start rushing. Discussion took place on "QTC" and by now you will have seen the result. Our new postage is 10c per stamp but further improvements may result. In its new form, "QTC" has been accepted for bulk postage registration by the P.M.G. Some of Evans' prospects came good. Tubes should be moving out soon. A quotation for QSL

ards should shortly be accepted by the Tourist Bureau and they should be available before long.

Bill 4WX took ill after this meeting and has doctor too the aforementioned switch away, so required in last month's notes for members to no longer have their names placed to no avail for older shoulders. Bill had one of the winter "wogs" and was set back some weeks. But, you know you can't keep a good man down. The final general meeting of our QSL Bureau Street Section was held on Friday, 25th with a final attendance of about 30 members and associates, with 4PR in the chair. We were pleased to have Jim 4HZ and associate Don Bryant from Central Queensland along. A motion to include the cost of QTC in our annual fees. We have to show a charge to get registration. This is only a book entry like A.R. There were no reports, but a letter was read from the Q.C.L.C. asking for permission to visit the station Saturday, October 7, at 9 a.m. Members will be shown the radio and radar installations. This should be a most interesting afternoon so advise the Secretary 4WX that you are coming.

The main business of the evening was on how to save someone else's life and, frankly, I'm a bit disappointed that more were not interested. This part of the meeting was in the hands of the State Superintendent of Surf Life Saving, Mr. D. D. Dore, who was joined by Mr. Doug and Mr. Campbell with him. One of our associates Paul Rudofsky gave a commentary on a film he helped make (we had no magnetic sound head) and assisted in other ways. Doug and Campbell had been up mainly to give his opinion. The demonstration was extremely well organised by Mr. Dorelove and was so interesting that many thought the clock had jumped an hour. Discussion had to be broken off because the time limit had been reached and could penetrate on the four manikins provided. After most of those present had competed, several had been trained previously, a short comedy was shown, and it was time for supper.

David 4DP, in thanking the visitors, as a member, commented them highly on their efficiency and sound knowledge. While supper was on. Bob 4RB and Des Lane watched Nick, Vince's first harmonic, draw folded paper pellets from a container to decide possible items. 4VM had a run of luck to get them.

Readers will be pleased to hear that Steve 4BB has returned to Bundaberg. "Pop" 4SA helped look after him in Brisbane and will have had a northern "holiday" by the time this is in print. Tom is continuing with R. Roberts in disposing of ex-4PN's gear. Ex-Treasurer of the Division, Charles 4NC, sent along some stamps to keep him posted with his QSLs. We remember the good work Charlie did for the Division and hope all work done by his daughter Claire, who carried on the position of Outward QSL Officer at the same time.

4JF renewed acquaintance with another ex-VK4 member, 4WZ, at the local Show in the person of Jack Farrel of 4WZ. Jack was President of the Division some years ago before he left for Quispie. Congrats. At AI 4SS on his efforts as Editor of the DX Notes in that journal. All is one who keeps the interest and interest in the DX world, keep handing him cards. This month's unclaimed QSL cards 4JL, 4LK, 4MA, 4MD, 4NV, 4NM, 4MV, 4MW I am pleased to report that the T.V. Handbook has been kept in spotless condition. Up to date and in excellent condition. Who wanted them? Don't become disinterested if your QSL is late-June and July issues are just to hand. "QST" is running on time.

Harry 4RA, who is close enough to seventy, has now got his 40m antenna up. He has two years has worked over 150 countries. Rig in Gelsos vfo for 10, 15, 20, 40, 40x with 307 in final, pi-coupling. Modulator 837, 637 and 43 driver to a pair of 6L6s. Antenna is a Cubic Quad for 10, 15, 20, 40, 40x. 40m is a pair of 1/2 wave end-fed Zeps. Old VK4 sub-editor work his first s.a.b., contact the "wrong way" round when he contacted 4VJ last month on 14 Mc.

John 4NA, formerly 4M, now 4NC, Club, 4CS, held their regular meeting on 7th August with Brian 4UW in the chair. It was reported that the new concrete base for the mast was ready and perhaps by now the antenna will be up. Members have been kept busy on special courses lately. This club forward a very interesting newsletter each month. 4A, 4PZ.

TOWNSVILLE

R.D. Contest has come and gone and I must say that on the Saturday evening never heard 14 Mc. for the last three or four years. This year, this band at that time has been a wash-out. Claude 4UX did not do so well as last year, while 4BQ and 4PS were heard running up a fair total of QSOs.

August did not bring much of an opening for DX, although it was open towards the West Indies and to Europe, but signals were not too strong. The Ws were in every day but hardly any VE heard.

Apparently most of the locals are still rebuilding their equipment, according to us; not heard some of them on the band for quite a while. Understanding that Bert 4LB sold his rig in preparation to installing a new one; he has been seen devouring the ads in "A.R." May settle in the new place in the 'bx' that he has advertised in our paper. Very pleasing to again see the manufacturing of Amateur gear in Australia. Hope they keep it up.

Arthur 4FZ has healthy sig on 7 Mc. While we are not involved in the DX chase, Claude 4ZY still enjoys a ragchew while Basil 4ZW reports two new members have obtained their tickets and another sits for Morse in October. When conditions are open it would be a pleasure if some Amateurs on phone would phone me and let me know what's what and vacate the cw portion of the band.

On August 17 had a short opening on 50 Mc to Japan and worked nine stations in 35 mins. The band was open. The s.w.r.s informed me it was a very weak week but no one was available to take advantage of it. Have for sale, no cost, one unwanted greenie who bobs up occasionally while I am on 14 Mc. Lowering my modulation to appear about 100 kc. lower in frequency does not seem to help the sig but the chaps that check cannot beat a signal against it. Disappears again to bob up weekly after. No visual indication on my meters. 73, 4RW.

SOUTH COAST

The outstanding occurrence of the month was R.D. Contest and participation therein must have been enjoyed by all. During a session with the Amateurs a state, 4WZ, put in sign 4WW. Now no more was heard of him for that section—but he re-appeared that evening. Another visit has been paid to 4R's QTH. Stan met the troops and then met Mr. Dell's equal. The DXers were the right bunch to go to. At present r.f. has been fed to the fetal stage. Phil 2TX, portable, was at Coolangatta early in the month on his way to Brisbane, north west and to the centre of Australia. Arrived at the meeting, Phil and Mr. Dell. Also this way was Ken 2UH and Frances. Causing them was most enjoyable, even though it was breakfast time—10:30 a.m. A brief visit was paid by Herb 4KM. Here's hoping, Herb, that the next visit will be longer and under more pleasant circumstances.

WIDE BAY AND BURNETT

The branch meeting was held at Torquay on 26th August, where there were quite a few members present. The weather was perfect in the morning, but the wind, gusty, blew the XYLO off the beach in the afternoon. The meeting was quite a lengthy one, mainly branch matters, and it was eliminated with a sale of equipment brought down by Jim 4MZ and 4WZ. 4WZ brought along a portable which consisted of a tx covering 14, 28, 32, 44 Mc, what a nice job Hughie had made of it too.

The club has now its own call sign—4WQ. The club has also at the moment by 4WZ for general amateur affairs. The 4WZ is on 725 kc. Everyone is invited to join, whether a member of the W.B. & B. or not, no how about us fellows? Let's hear you on Saturdays on the hook-up.

Mike 4HD now on s.s.b. using a GURU antenna for the 14m for the rx—seeing its a Racial Ken Cliverton busy studying for his ticket and building a super-duper rx with an Eddystone dial. Col 4WZ was off the air for a while during the breakaway, but he is back now. What was the cows were eating his feed like ribbon type? Bill Tomlinson still travels to Gympie for his lessons and is re-building S22. Barry 4LN broke down and cried when he found his S201 and Viking II standing in the sun in the shade after the rain. Peter Gwilliam now has a call sign—4ZHG. Congrats Harry 4SW now ready for his holidays with mobile and all the antenna silver plated, he's not game to meet any of the boys in case they say "Hello, Kelly". There are five new call signs in Maryborough, but we don't know them as yet; one of the boys up there sent for his call sign but did not enclose the necessary 1 db.—must think they give them away, or was he just keen?

CENTRAL QUEENSLAND

When my news bird was over Central Qld. last month he found out that: The membership of the branch was increasing, two new members joined at the July meeting and three more joined at the August meeting when Frank 4ZM was to be guest.

The branch arranged a day out for Sat, 20th July, when four mobiles set out in different

directions to work into base. 4NC, Joe 4LC and Frank 4ZN had gear trouble, so just listened to the gang, but all agreed that it was a good day and another was arranged for 8th Aug, when there were a lot of "duck eggs".

4C5 is very active on the bands. 4NG still very active on 50 Mc and can be heard on 3 Mc. 4MC is operating on 14 Mc. 4ZL is active on 3.5, 7 and 144 Mc and will soon be on 14, 21 and 50 Mc. Frank has a 20x mobile covering 3.5, 7, and 14 Mc in his new Holden. Secretary Harold 4DO was recently home by special but is due to return to Command outfit, which is going well carrying out mobile duty. 4MT has a good mobile covering 7-21 and 50 Mc. 4ER is another with his mobile working well.

CAIRNS

Congrats to Rick Lake and Bill Gielis on obtaining their Limited certificates. Also congrats to Basil 4ZW who coached them. David 2WD was in Cairns during August for a few days and initiated the local lads into the mysteries of 6 meter operation. His mate and companion Basil 4ZW that his 4 el. beam was OK. Basil received David from departure until he went onto the range at Kuranda. The Atherton gang are keen on 4 Mc. Charlie 4GK and 4ZAW are getting into the hobby good will but can't get into Cairns at time of writing. Charlie has a T35 going for higher power and by now will have made efforts to bounce a signal into Basil's serial 4GR and 4AV proposed to set up a "General Annie" net of mobile blenders, a 4000 ft. high peak near Millas Millas, to make sure their signal doesn't get side tracked.

ARMED BOYS SCOUTS RADIO CLUB

Heard the club, 4AB, putting up a score in the 4WD contest. The Club, 4AB, is the Official Club, Bob 4RR, reports that five members of the senior troop are sweating hard to get call signs of their own and have set a target six months hence—to capture the coveted shield.

Quite a few old-timer Hams have passed through this particular Scout group which, incidentally, is one of the oldest in VK land, having been formed in 1905—just one year earlier. Eddie Powell founded the group in England. The club, however, seems even more proud of the fact that their group is the only one, as yet, in VK to have a Ham station of its own. They are endeavouring to interest other groups, Amateur Radio and see in the annual Jamboree this year an excellent medium of achieving this object.

We certainly need more young blood in the game and this is where YOU, fellow-Ham, can help. Remember, the Jamboree-on-the-Air week-end 1st-2nd October, and do your best on both days by taking part in it and inviting a few Scouts from your nearest group to share the mirth or the key for the occasion.

The official station of the Boy Scouts International Bureau VESJAM, at Ottawa, will be operating at full blast during the Jamboree-on-the-Air week-end. The station is run by W.A. and all Ham bands we keep an ear open for him on 3750, 7210, 14195, 21180 and 38480 kc. The general call will be "CQ Jamboree". If you don't know where the loca. Scout camp is located, get in touch with 4AB or 4RR tell them the measurements of your shack—or how many Scouts it will hold, and they will do the rest. If you can't contact over the air you can ring Bob on 38-3923 (home) or 38-3853 (business) or drop a note to his QTH at 2 Garden Gr., Dorrington, W.6, Brisbane.

SOUTH AUSTRALIA

The monthly general meeting of the VK3 Division was held in the clubrooms to the usual capacity roll-up, and took the form of a display of various ham gear and equipment. Quite good work exhibited, in fact some of it looked more like professional gear and the whole display once again demonstrated just how far Amateur Radio has come over the last few years. This type of night has always attracted both amateurs and non-amateurs, the main reason being that all of us like to see just how the other chap builds his gear, besides which such a display stimulates ideas and creates the incentive to go ahead with the half-finished project or for the piece of equipment to end all equipment.

Council, with its usual sagacity, decided to get the business section of the meeting out of the way before the display commenced, so as to give the display a better chance to find good reasons to fade away at the end of a lecture or a display, and at the same time dodge the somewhat boring to them intricate details of what makes the Division tick. Nothing



TEST EQUIPMENT

HEATHKIT GENERAL PURPOSE 5" OSCILLOSCOPE KIT (OM3)

"Y" sensitivity 0.08v./inch, 4 c.p.s. to 1.2 Mc. Rise time 0.25 microseconds. Sweep 20 c.p.s. to 150 kc. Input 105-125 v.a.c. 50/60 c.p.s. 65 watts Weight 22 lb. Price £44/12/-.



HEATHKIT EXTRA DUTY 5" OSCILLOSCOPE KIT (O-12)

"Y" sensitivity 10 mV/cm., 3 c.p.s. to 5 Mc. Rise time 0.08 μ sec. Sweep 10 c.p.s. to 500 kc. Input 240 v.a.c. 50 c.p.s. Weight 22 lb. Price £94/8/-.

HEATHKIT TV ALIGNMENT GENERATOR KIT (TS4A)

When used with oscilloscope gives you all essential facilities required for alignment of fm. tv. 5.5 Mc crystal marker provided. Input 110 v.a.c. 50/60 c.p.s. 50 watts Weight 16 lb. Price £55/6/-.

HEATHKIT AUDIO GENERATOR (AG-9U)

10 volts, 10 c.p.s. to 100 kc. pure sine wave. Switch-selected frequencies/attenuation. Weight 10 lb. Price £50/1/-.

HEATHKIT CAPACITANCE RESISTANCE BRIDGE (C-3U)

Measures capacity, 10 pF. to 1,000 μ F. Resistance 100 ohms to 5 meg-ohms. Power Factor. Weight 7 lb. Price £23.

HEATHKIT AUDIO VALVE-MILLIVOLTMETER (AV3U)

1 m.v. to 300 V. a.c. 10 c.p.s. to 400 kc. Weight 8 lb. Price £36/12/-.

HEATHKIT DIRECT READING CAPACITANCE METER (CM-1U)

Full-scale ranges of 100 micro-microfarad, 1,000 micro-microfarad, 0.01 microfarad, and 0.1 microfarad. Easily built in a few hours. Price £38/6/-.



HEATHKIT VACUUM TUBE VOLTMETER (V7A)

The world's largest-selling V.T.M. Measures volts to 1,500 (d.c. and r.m.s.) and 4,000 pk. to pk. Resistance 0.1 ohm to 1,000 megohms. D.C. Sensitivity: 7,333,333 ohms per volt. Weight 17 lb. Price £32/8/-.



WARBURTON FRANKI

World's Finest Build-Yourself Kits —yours for NO DOWN PAYMENT when you take advantage of W.F.'s "ADD-ON" Purchase Plan!

Hundreds of Heathkit owners are finding Warburton Franki's Heathkit "ADD-ON" Purchase Plan to be the most convenient way by far to acquire the top quality equipment they need for testing, stereo, amateur radio and marine.

What is "ADD-ON"? Just this! ONE small DOWN PAYMENT brings you your first Heathkit and after that additional Heathkits can be acquired FOR NO FURTHER DOWN PAYMENTS providing your total of monthly repayments is sufficient to cover the deposit required on your new purchases.

Once your credit is established, all you do is list the Heathkits you require on the mail order form, indicate that they are to be "added-on" to your account—and then forward your Heathkit credit card to us. The Heathkits you need are then sent promptly to you.

To become a satisfied Heathkit owner visit your nearest Warburton Franki Heathkit Centre or order by mail. Full details of Easy Payment Plans, together with Free Catalogue listing the comprehensive Heathkit range, will be sent on request.

MAIL ORDERS delivered FREE in the metropolitan areas of Sydney, Melbourne, Adelaide, Brisbane and Perth.

AMATEUR EQUIPMENT

HEATHKIT "APACHE" HAM TRANSMITTER KIT (TX1)

Combines quality, versatility, style and low cost. Features: single ended, standard "spotting" power, button for "zero beat". Low level speech clipping and time sequence keying. Offers 150w. phone and 150w. c.w. input operation. Price £209/1/-.



HEATHKIT "MOHAWK" HAM RECEIVER KIT (RX1)

Precise synthesis, digital front end assembly. Crystal controlled oscillator for no drift reception. Provision for 6 and 2 metre conversion. Similar in styling to TX1. Covers all bands 100 through 10 metres. Price £119/8/-.



HEATHKIT BALUN COIL KIT (B-1)

Match unbalanced coaxial lines with this convenient transmitter accessories. Weight 5½ lb. Price £10/1/-.

HEATHKIT SINGLE SIDEBAND ADAPTOR KIT (SB-10)

Covers 80, 40, 20, 15 and 10 metre bands. The adaptor produces either U.R.B., L.S.R. or D.S.B. signals with or without carrier insertion. Price £100/10/-.

HEATHKIT C.W. TRANSMITTER KIT (DX-20)

Best watts for £1. Clear sign. Single knob band switching. Covers 80-10 metres, using crystal or an external V.P.O. Weight 18 lb. Price £40/8/-.

IT'S EASY AND IT'S FUN TO BUILD HEATHKITS!

You'll be amazed at how simple Heathkits are to build! Step-by-step assembly instructions take you through every operation—in the simplest, non-technical language. And there are plenty of detailed diagrams to show where each and every wire and part is placed. It's so easy even for a complete beginner!

ADELAIDE: 204 Flinders Street — Phone W 1711
BRISBANE: 233 Elizabeth Street — Phone 31-2081
MELBOURNE: 359 Lonsdale Street — Phone 67-1351
PERTH: Tough Instrument Service Co., 993 Hay St.
Phone BA 7615. (Prices slightly higher in Perth)
SYDNEY: 307 Kent Street — Phone 29-1111

of any great importance came out of either Federal or general business, although a couple volunteers were roped in to the Disposals Committee in the persons of Old Joe and Bogy SNO. QSL cards were then distributed by George Boyd, who reminded those who heard him above the din of conversation that number of the ZB boys who had recently received their QSL cards should be sure to check their new call signs as he was holding quite a number of cards for these chaps because he was unaware of their new calls.

"Smoko" was then announced and this gave everybody an opportunity to examine more closely the gear of each man. At the foot of the platform, rostrum, stage or to be exact, at the feet of the chairman, John A.C., I have to slip him in somehow, must keep secret with the boss of Council, a friend in court and a few others. The reason is that the things that were said at Council meetings don't bear repeating. During this closer examination of the gear on display, the inevitable knob spinner and dial twister came into his own and really resulted in his being suspended. Once he got it out of there and from then on a number of these addicts walked around with their hands behind their backs with a look of offended innocence on

their own dials. At one point members returned to their seats (those who were quick enough to find them) and a panel of judges was appointed to make the awards, after each exhibitor had described his own particular piece of gear and related his listening experiences. The aforementioned panel of judges (who must remain nameless for their own safety) finally decided on the award winners who were as follows: The Listener section was won by Fred Frazee, W1ZP, for making the best Full Member section went to Cyril HSDY for a communications rx. and the VHF. section went to Bob 2ZFC for a 30 Mc. tx. To the winners and the losers, go the congratulations of the Division for job well done. An effort toward making the monthly general meeting such a successful and entertaining evening.

Sat across the aisle from Leith SLG at the meeting, and I heard him say at the time he was living on an argument with himself about whichever matter was before the chair. He leaned over to me once and said, "These meetings we are not like the old-time ones Fancy, we are like the ones flying through the air." Whilst I cannot remember having to dodge any chairs, I must admit that the meetings today are much quieter than some of the old-time ones. In fact I cannot remember being openly insulted for some years!

Our genial Secretary, Pat US, brought down the house when he announced that among our P.M.G. disposal gear for tender was a publicistic shield which could not fail to produce shock and awe for someone. I waited in anticipation for him to suggest that my avulsive figure was what he had in mind, but although he has only been on Council for a couple of months he has already absorbed their technique, and simply leered at me.

complaint when he told members that the conditions for future buy and sell nights would be altered, and the auctioneer would stand in a narrow opening on the stage and handle the bids. Get it!—stand in a NARROW opening. I told you earlier it pays to have a friend at court. I'll bet he's tearing up brown names in the *Advertiser*, of course, at his imagination.

paper in a frenzy of rage at his unconscious self. I thank you OM, and if at his father were here, he would thank you also. Excuse my girlish rippled.

The VKS Division has two means of announcing the week-end duty roster for all keen and interested W.L.C.E.N. members, the SWI sessional by Keith with the SWI and the other column handled by yours truly. Keith and I are tremendously impressed by the painstaking manner that all W.L.C.E.N. members are reading and listening to the said rosters. In fact we would be overcome with our importunate desire to have them read so well that we have been bent out of shape with our rosters. Keith announcing a totally different roster to that which I have been printing in the paper for the past seven weeks. The fact that no turmoil or confusion has been reported as far as members go on duty is a credit to both of us, and we will continue to do our best for the Society and keen attention to duty of all members.

The sagacity and keen wisdom to duty of all members, to say nothing of the relief to Keith and myself. Ho hum!

Talking of the call-back, a number of the regulars were intrigued to hear Len SLG bob

up the other Sunday and exchange greetings. Nice to hear you GM, and your signal where you first called was extra good although you had taken a bit of a dive when you eventually took answer from ~~PC-1000~~.

Took your turn, Encore, Encore.
Beg SRR to thank you for the month for interesting stories. Finally, because of the many appreciative reports being received from the country centres regarding his 80 mx Sunday morning re-broadcast of SWL and secondly, for the fact that he became a grandfather for the first time, Beg was not allowed visitors for 14 days mainly, but was allowed visitors for 14 days mainly. I had to go up and see him, and if you see him first, take off, because if you don't, you will find the conversation becomes tactfully led round to his grandson Peter. Congratulations Reg, although you can't take all the credit.

Talking about the SWL re-broadcasting, I see that Tom **SAQ** is handling the 14 Mc. side of this excellent set-up for the outlying members. Have heard him faintly at times, but as he is using, more often than not, the gospel according to Compa **SEF**, I pass him by with only the barest nod of recognition!

Lance SXL has apparently given his set-up an injection of monkey glands or something, judging by the signals being received in various places. It is getting monotonous to hear the comments from all that hear him, "What's the secret Lance?" Buck SDA, Roy to you, bobbed up again on the SWI call-back and sounded in good form, although he admits that he is still taking things easy. Nice to hear you, Buck, good signal, too.

Had my usual sticky break session this weekend into the weekly sked between Rex 3DO and Bass 3ABT and was surprised to hear Doring wheel what sounded like a barrow load of concrete into the shack and dump it on the concrete table. He used his pencil to mark off the perimeter of the best statement ever made by Rex. I was completely defaxed to hear him say "Thank you for the cup of tea sweetness!" Just goes to show, noises over microphones never sound as they seem. Oh, by the way, that XYL who refused to talk to me on OM's contacts refused to "that horrid old

Bernie SWC heard the other Sunday morning, in contact with Keith SWI giving what was apparently a "status report" on his health. He said to him it was "blowing like blizzarding blazes." It did not seem to be affecting his signal in any way. Did a good job in the R.D. Contest! Bernie? No doubt about you, Brian! The "Admiral's" maritime standards is about to embark on boat building in a big way. I feel it my duty to point out that before any type of naval uniform can be worn, the admiral must be in the eye of the "Admiral". Jack SJS heard, but not seen, frantically calling for assistance on 288 Mc. to extricate his car which was down to the axles in mud. Despite the road back to prevent any help, he eventually got through, and all is well.

morning and my sympathy was severely tested, for I found that the man in question, which was seated in a bent-up, mis-shaped form of humanity, which to me appeared to be on the brink of leaving this world. Imagine my surprise when I saw him the next day, in a living dead jump sprightly from the wheelchair, than Rex for the ride, and then dash madly up the street at a speed which would have been impossible for any human being. Dear oh dear, can I get a mention in this column?

Gil 5GX is a new Council member for Gil replacing George 5GG who resigned owing to pressure of business. Gil, so I am informed, is a school teacher, a very active man, plus being active on the "square" bands, and is also very interested in the Divisional activities. All of this naturally adds up to the fact that he is to be a good Council member although of course his same automatic goes in my black book alongside all the other Council names. Joking aside, Gil, welcome to the executive side of Amateur Radio, may

your light burn long and bright.

Carl SSS, Frank SMZ and their mate Skippie called on the Baronial Hall of Luke SLL the other day, and many and varied were the topics of conversation. Having seen at the speed at which Frank dashed inside at the mere mention of the words "cup of tea," I can well see now just why he breaks legs and arms.

etc., etc., with reckless abandon. If there had been anybody in the road he would have gone right through them. Tweet, tweet.

endeavour to keep the whole matter secret and hush hush, he forgot to sign his name. However, I think that I know who it was, and my thanks go out to him.

Claude SKU has his new tx on the air steadily and very happy. He has been having a long time with his work tx, although I will reserve my personal opinion until I have heard it. What about it Claude? Stuart SWS has built a new modulator and has been having him trouble. No doubts are these notes are printed in the wrong place. The sun will bring us plenty of fun and of forgotten things. Blimey! Did I write that, am I becoming lyrical. Eric SKU has been cashing in on the prevailing DX on 40 m with his well-known brand of c.w. Unless my memory serves me wrong the gilding season is in the offing and Amateur Radio should begin to ease off. Am I right?

the process of hotting up an AR7 with much success. Ron SWH is in the land of the missing at the moment of writing, but should be back again at any time to repair the frayed "yarn". East is one of the most popular appreciations on the reception of the 90 maz SWL re-broadcast. Take a bow again Grandpa. Dave SWA in Perito is considerably active on 10 maz and has been heard on 90 maz. He has his gear in working order from 25 maz right up to 1 maz, including his mobile. As a matter of fact, any time that I listen mobile or car and come across him he is at some time or other.

Pete 5FM, but apart from this can be almost classed in the inactive group. Settled down OK in the new job, Colf At least I can always say that I knew you when! Graeme 5XV and Col 5XY heard in nightly schedules on the 1 M. band this month. Col was portable somewhere in the Flinders Ranges, and Graeme HQ'd at his home, 5TH, "Ringer" and

was made known that Col. judgment by the strength of his shanks. Two copies of the perfect and speaks well for the portable rigs of Col's in the crowded 7 Me. band. Bob SNW heard in contact with JAGD mobile news. Generally from the various contacts of JAGD for days on end the contacts of VK6s were on their way to a gathering of E.F.S. somewhere in VK6. Don't know if they passed through our fair city or not, but we were glad to see them. The people in our city of churches would be too much for me! David SAW heard on 7 Me. mobile out near the Mount Gambier aerodrome. He was on his way to Penola and judging by the signals he was passing through. The mobile signals cover a large area of VK6. I myself heard a VK6, a VK7, a VK4, and a VK3 calling him, to say nothing of sundry VK5s.

Had my annual contact in the R.D. Contest with ARRL 4P8 and I received a sketchy report of his health. He was still in his wheelchair, but he had been released from the hospital and was back home. He was still having trouble with his eyesight, but he was able to get around with a cane. He was still having trouble with his eyesight, but he was able to get around with a cane. He was still having trouble with his eyesight, but he was able to get around with a cane.

VK3. It's a long time since I have heard William on the air, although it is a long time since he first came on the air. Extra good signal OM, I picked your voice as soon as I heard you, no call sign was necessary, which, if I might be pardoned for saying so, is a

It is not often that I must confess to being mystified, with my army of spies and agents I can usually get the answer to most things in the world of Amateur Radio, but I am beaten this time. Will someone come to my rescue? What has become of Arch XXX? The

In closing the notes for this month, I must add that I was present at the meeting heard first on 6 MW, and then repeated with gusto by Keith SWI over the Sunday broadcast, to the effect that the voice heard was that of Don Corbett and that he was not mine, but that I was standing behind the scenes, wielding a Simon Legree whip. Cut to the quick by the knowledge that I have been serpent-possessed in my bosom, no course remained open to me but to remain silent, not upon the corals of Pansy, for fear of the disclosure of all the full facts of the forgotten lightning arrestee!" T3 (PnNSy to you).

WESTERN AUSTRALIA

Well the most important month of the year has passed and much activity was listened to in the R.D. Contest. What a crowded section of the spectrum during the 24-hour period and what a variety of stations there were. The activity is not heard at other times. However considering the conditions on the high frequency bands, both before and since, Amateurs were certainly fortunate with the excellent openings on all bands between VK8 and the other Eiders N.Z. and N.S.W. patients wait for results and post mortems.

The monthly meeting was held on 15th Aug. at the usual place and was well attended. Heard one of our regular visitors telling a metropolitan story which she put his name in the visitor's column. Nice going Herbie. After business was concluded, SAG gave his long-postponed lecture on "Glass" and its hows and whys. It was well worth waiting for. What a lot of useful information was given. Next month we will have another speaker. The meeting concluded with an auction sale of equipment belonging to SWH. This was easily conducted by GJK and bidding was quite animated although some members seemed to bid low and lost the race. However, with the help of SWK, most members carried something home.

Activity on 40 m was enlivened during the month by the invasion of VK8 by some ten mobile gear. They don't try very hard to keep the secret of the S9 plus signals heard in VK3 from SAG, SCL, SKJ, GLG and others. By the way, since he has become a gentleman of leisure, Len GLG is heard on the lower bands giving many useful pointers to new members in his own whimsical way.

ERG is gradually overcoming his t.v.l. problems and also DXing very successfully on the higher bands. Heard Bob and SAG having a discussion one night on t.v.l. We have a few mobile gear tapes here, too. Some comments with comments from SWL added. These boys certainly have their problems.

Many strange noises are heard here on the h.f. bands. Some operators seem to come into play. However, most of them are just hard to resolve even on my over-worked ARS. Perhaps I should get busy with a tx and start something to fill in the bands myself. There are more than the same five or six on 30 m now, although I am not sure if these contacts with Eastern States and ZLs to be had at present. However, with so many new call signs due on the bands, it may improve. We are somewhat unfortunate in VK8 in regard to t.v.l. Some of the contacts are operators are between a hundred and two hundred miles from Perth and this is considered a suitable area for t.v.l. viewers. The only direction there are no t.v.l. problems at present is west. WYR is the one call sign missing. S9 is still here, as is SCL. Approximately 150 miles south of the t.v.l. tx. of course any interference must be caused by him being on the air. I wonder if ZEL could give him any hints?

There is enough for this month as we must leave some space for SPS with his enter-

taining speech and also for the VK8 comments on their VK6 tour.—73, 7ZK per SLE.

TASMANIA

The R.D. Contest is over for this year, bar the shooting and the checking of logs. Some observations can be made at this stage however. First, there were fewer VK7 stations taking part this year, probably about 40 to the best of my knowledge. Secondly, the average of the six highest logs from this State will be not as high as formerly. Thirdly, and this is a good point, the c.w. section was very well patronised by our members. Fourthly, congratulations to David TMR on his fine log. Fifthly, in my opinion, VK8 is the State to issue a real challenge to us, their effort was considerable. Sixthly, SNO absolutely astounded us with his great effort. Seventy, the effort from VK8 appears to be most impressive this year, particularly the c.w. side of the Contest. We would like to see more participation from that Division, even though they are only one point per contact for us.

Congrats. to TEB, ex-7ZAU. Ted obtained

his full licence early in August and has been heard, particularly on the 40 m band.

Although I am writing this before the Hobart Exhibition has taken place, I want to thank all the helpers for their invaluable assistance in getting the exhibit established and operating. Although I cannot mention every one who took part, yet I want to thank publicly, not necessarily in order of merit, Michael, 7ZAV who spent his holidays to wait upon the exhibitors; Terry, 7ZC for the loan of his exhibition, to Terry, 7ZC for the loan of his v.h.f. rig, to Ken, 7KA for the loan of his National rx, and to many others I cannot name, for instance for the loan of antennas, masts, etc.

Jack, 7JB is at present constructing a "small" rig, with an 807 in the final, to run about 80w. Jack describes this rig as a semi-portable, and it is designed for operation during the Jamboree. The Ant. on 21st and 22nd October. Jack intends to use this rig upon completion while he reconstructs his big rig and t.v.l. proofs same.

While on the subject of the Jamboree, remember to give it by word of mouth to others of their way of thinking—it is great fun. Also, remember the social function at Lismore, beginning at 2000 hours on Friday, 21st Oct., admission £1 per head, profits to go to the future raising committee for our projected club rooms.

Bob TOM is on the air to a much greater extent these days. He tells me things have eased off a bit at work so it is good to hear you are still active. An unusual number of signs have been heard about the middle of August, namely, IJD, with ample speech clipping. How about repeating the dose Tiny? 73, 7ZK.

NORTH WESTERN ZONE

News is rather scarce this month with the usual sporadic activity. The Open September Zone meeting was fairly well attended. A second helping of a lecture on s.s.b. was given by Ken, 7AI, who certainly knows his subject. Like myself, many were asked questions for which they did not have something definitive, but I feel sure we gained some real knowledge in a highly mysterious subject. TXL again showed a fine turn of skill in the role of auctioneer and some classic examples of junk changed hands.

Spent a couple of interesting evenings with 7KS last month. Quite an experience to work familiar voices from a new rig. It's happened at last—David TMR contracted talker's throat and the rig was off to shut down during a recuperation period. There seems to be learned somewhere here. Saw a couple of the boys in the "game" gleefully discussing a sudden windstorm that swept across the land the other night. They were rubbing their hands, counting the number of trees that had been blown down. Wonder why? Sam TMR is still collecting rare DX. I must ask him how many countries? I am sure it would be rather surprising.

The R.D. crew has been asked to support a Hobart Exhibition at Devonport in November with a working exhibit. Looks like a chance to show off our pieces, so rally round chaps. Associate Bob Simpson sold us the idea. He doesn't know what it is going to cost him though.

Athol 7LR, a call sign familiar pre-war, is talking of making a come-back to the bands—more QRM. There is much competition in this area in 40 m signal reports from ZL. However, the R.D. crew is determined to maintain prestige. Even got to stage where competitors believe I have told them all the answers! hi. Has anybody a recipe for bringing a Tasmanian tiger out of hibernation. If so we would appreciate it. The treatment ZL has done some horrible things to Hams Radio. Everywhere one sees Hams busy selling them, repairing them, building them or watching them with the excuse that t.v.l. offers no alternative. And it's happened here—a pity.

Finally, it's a small world. Met XYL 3KU in southern corner of Tasmania the other day. Often heard and finally seen. So off and clear until next month. 73, TMX.

NORTHERN ZONE

During a recent visit to Hobart I was asked if the Northern Zone was still alive, so maybe a few notes would not be amiss and would let the rest of the gang know what we are doing. The 7TH and 7R7 members and one prospective member attended the August meeting, which was held at the QTH of yours truly (7ZRJ) at 11 Mayne St., Launceston. The usual business was attended to and members were requested to make up for the R.D. Contests. Den 7DK has power troubles and is operating on 8w. at present (still seems to get out OK!). Col 7LZ brought along a transistor tape re-

corder for our inspection and it replayed a portion of the meeting with Max JCA at the controls. Very nice but the 50 db. is a bit high for most of us. After the meeting all adjourned to the shack to inspect the portable equipment and the 100 ft. mast on the air shortly. Later members were shown some color slides taken on a recent visit to Hobart. The evening concluded with supper as usual.

Last month there was a fair amount of activity. 74, 7ZK with 7ZB and 7ZC were located at Kelso, Northern Tasmania on regular skeds with Ltron. Also Peter, IPF portable 2 muz using a 5 el. beam at Evandale contacted 7ZAO at Lenah Valley, Hobart, and was heard at S8 for about 30 mins. and has received QSL card confirmation. 73, 7ZRJ.

HAMADS

Minimum 5/-, for thirty words.

Extra words, 2d. each.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own property. Copy of advertisement received by P.O. Box 26, East Melbourne, C.3. Vic. by 5th of the month, and remittance should accompany the advertisement. Call signs are now permitted in Hamads. Dealers' advertisements not accepted in this column.

FOR SALE: Collins Mechanical Filter, Type F 455C-31, 3 kc. bandwidth, little used, £20. AR7 complete, ordinary plus bandspread boxes, modified with Q Mult., hot on 20, £40. BC134G Receiver, 150 kc. to 1500 kc., has 900 kc. l.f.s., £20. 2AT4TGs 30/- ea. 4-20As, new £6. used £3. Complete Transmitter, Geloso to 6146, incl. p.s. and mods., £6. VK5ACN, N. Stilwell, Box 104, Bendigo.

FOR SALE: One set of eight unused Bamboo Poles for Quad Antenna, £3 ex Croydon or plus freight. A. Roudie, VK3UJ, Croydon Way, Croydon. Phone (bush. hrs.) 69-1159.

SELL: Professionally built all-band 150 watt s.s.b. phasing rig in three separate shielded units—exciter, linear and power supply. Completely t.v.i. proofed. This rig has been an outstanding performer and is in immaculate condition. It is being offered to the highest bidder and must be sold this month. Can be heard on the air from VK3XO where it can be inspected at 340 Rathmines St., Thornbury, Melbourne (Phone 44-1823).

SELL: Windmill Tower, 40 ft., with beam turning mechanism, prop pitch motor, etc. Power supplies. VK3SX, Phone 24-1903.

SELL: R1155 Com. Rx unmodified, good order, no pwr. supply. £17/10/0. ATR-2B, 12v. genemotor pwr. supply. £3. New Philmore 5 valve Rx (similar). Hallicrafters S38E, good stand-by for beginner. 4 bands 550 Kc. to 30 Mc., slide rule dial, bandspread, r.f. gain, b.f.o., noise limiter, phone jack, Accessory socket, Q Multiplier Jack, £17. Also RAX Rx 200 Kc. to 1750 Kc., good tunable l.f. or Q Fiver, £8. Phone 69-3181 (9 a.m.-5 p.m.) ask for Geoff Clarke, or LA 7988 (6-7.30 p.m. only), or write care Brash's Services, 155 Gladstone St., South Melbourne.

WANTED: BC453, 200 to 500 Kc. Command Receiver. VK4UK, P.O. Box 92, Bundaberg, Qld.

WANTED TO BUY: Receiver valves of types 7S7, 7H7, and 7R7; need not be new. Particulars to VK3ACD, 104 Maude Street, Shepparton, Vic.

"AMATEUR RADIO"

The Wireless Institute of Australia was founded in 1910 to promote interest in Amateur Radio; today each State has its own Division who is responsible for intrastate matters. Each elects a member to Federal Council who delegates to Federal Executive the task of implementing their decisions on Interstate matters. The Federal Executive is nominated by Victorian Division and these nominations are ratified by all Divisions.

Any person with an interest in Amateur Radio or Short Wave Listening may join the W.I.A. It is not necessary to possess an Amateur transmitting licence. Enquiries for membership should be made to the Secretary of the appropriate Division. Various affiliated clubs are in operation and transmitter huts, s.w.l. meetings, v.h.f. groups and scrambles, etc., all form part of their activities, full details of which may be obtained upon application. All financial members of the W.I.A. regularly receive a copy of "A.R.", the cost of which is included in the membership fee.

The W.I.A. is a non commercial society with honorary office-bearers. Every Sunday the Divisions make official broadcasts from their WI transmitters and these sessions are designed to bring to all interested parties the news and views of that Division. Scheduled broadcast times are given below.

"AMATEUR RADIO"

P.O. Box 36, East Melbourne, C.2, Vic.

Editor:

K. COCKING — VK3ZFO

Publications Committee:

G. W. Bayly (Secretary)	VK3AON
S. T. Clark	VK3ASC
R. S. Fisher	VK3OM
R. Higginbotham	VK3RM
E. C. Hindle	VK3H
A. Roudis	VK3UJ
J. Vale	VK3PZ
L. T. White (Cartoons)	VK3ZEW

Advertising Representative:

C/o. P.O. Box 36, East Melbourne, C.2, Vic.

Printers:

"RICHMOND CHRONICLE" Phone: 42-2419
Shakespeare Street, Richmond, E.1, Vic.

Publishers:

VICTORIAN DIVISION W.I.A.
Reg. Office: 528 Franklin St., Melbourne, Vic.
Last month of each month. Subscription rate in Australia and Overseas is 2/- a year, in advance (post paid).

All Correspondence should be forwarded to:

THE EDITOR,
"AMATEUR RADIO,"
P.O. BOX 36,
EAST MELBOURNE, C.2, VIC.

before the 8th of the month preceding publication. Technical articles should preferably be typed, double spaced, on one side of the paper, with wide margins. All drawings should be large and done in Indian ink.

Back copies may be available; enquiries to P.O. Box 36, East Melbourne, C.2, Vic.

Any complaint regarding non delivery of "A.R." and change of address should be made to the Secretary of the member's Division and not to "A.R." direct.

FEDERAL EXECUTIVE

Box 261W, G.P.O., Melbourne, Vic.

President:

G. M. HULL — VK3ZS

Secretary:

J. R. LANCASTER — VK3JL

Federal Councillors:

New South Wales: PERCY HEALY	VK2AEL
Victoria: ALAN ELLIOT	VK3AEL
Queensland: BERT HINKLER	VK3AO
South Australia: LES DUNCAN	VK3KA
Western Australia: RON HUGG	VK3KH
Tasmania: TED CRUISE	VK1EJ

Federal Contest Committee:

LON JENSEN, Manager
Box 8012, G.P.O., Hobart, Tasmania.

QSL Bureau:

R. E. JONES — VK3RJ

Awards Manager:

ALF KISSICK — VK3KB

1 Macfarlan St., Brunswick, N.10, Vic.

NEW SOUTH WALES

14 Atchison Street, Crows Nest, N.S.W.

President:

W. J. LEWIS — VK2YB

Secretary:

R. W. LUTHER — VK2ZEL

Meeting Night:

Fourth Friday of each month at Science House, Gloucester Street, Sydney.

is the official journal of the Wireless Institute of Australia and was first issued on 1st October, 1933, by authority of the Council of the Victorian Division, the present publishers.

New South Wales (continued)

Official Station VK2WI:

Sundays, 1100 hours E.S.T. on 3575 Kc., 7146 Kc. and 1453 Mc. Intrastate Call Backs taken on 3500 Kc. V.H.F. Broadcast, 1830 hours E.S.T. on Sunday, 2000 Mc.

S.W.L. Group:

Secretary: Doug Allen, WIA-L2215, Merlin Night: Third Friday of month at 14 Atchison Street, Crows Nest.

V.H.F. Group:

Meeting Night: 1st Friday of month.

Secretary: Bob Ridgley, VK2ZAR.

Divisional Sub-Editor "A.R.":

Ted Whiting — VK3ACD

QSL Bureau:

Manager: Frank Hine — VK2QL

Box 1734, G.P.O., Sydney, N.S.W.

Membership Fees:

Full Member — £2/1/0

Associate Member — £2/0/0

SOUTH AUSTRALIA

Box 1234K, G.P.O., Adelaide, South Aus.

President:

C. J. HASSELDINE (Phone 45-2851) — VK3JC

Secretary:

P. R. O'CONNOR (Phone 65-6559) — VK5US

Meeting Night:

Second Tuesday of each month at St. Paul's Church Meeting Room, Cr. Flinders and Pul-tency Streets, Adelaide.

Official Station VK5WI:

Sundays, 0800 hours on 7146 Kc. Relays on 3715, 3815, 3915, 4015 and 2835 Mc. Intrastate Hook-ups taken on 7125 Kc. Frequency checks given when VK5WI is on the air and also by VK5MD by arrangement.

Divisional Sub-Editor "A.R.":

W. Parsons — VK5PS

QSL Bureau:

Box 2181 Road, West Mileham, S.A. — VK5RK

Membership Fees:

City: Full Member — £2/0/0

Associate — £1/9/9

Country (both Grades) — £1/10/0

Junior Associate Member — £1/5/0

Nomination Fee (all Grades) — £1/5/0

WESTERN AUSTRALIA

Box N1002, G.P.O., Perth, West. Aus.

President:

R. W. S. HUGO — VK6KW

Secretary:

A. PARKES — VK6MDO

Meeting Night:

Third Tuesday of month at Room 207, Perth Technical College.

Official Station VK6WI:

Sundays, 0930 hours W.A.S.T. on 7146 Kc. Intrastate Hook-ups taken on 7065 Kc.

Divisional Sub-Editor "A.R.":

L. S. Ellington — VK6LS

QSL Bureau:

J. Rumball — VK6RJ

Box 3118, G.P.O., Perth, W.A. — VK6RJU

Membership Fees:

City: Full Member — £1/15/0

Associate — £1/10/6

Country: Full Member — £1/10/0

Associate — £1/10/0

TASMANIA

P.O. Box 851J, Hobart, Tasmania

President:

T. ALLEN — VK7AL

Secretary:

K. MILLIN — VK7KA

Meeting Night:

First Wednesday of month at the Club Rooms, 147 Liverpool Street, Hobart.

Official Station VK7WI:

Sundays, 0900 hours E.S.T. on 7146 Kc. and 3672 Kc. Intrastate Hook-ups taken on 7115 Kc.

Divisional Sub-Editor "A.R.":

L. Nichols — VK7ZZ

S.W.L. Group:

Meeting Night: Second Wednesday of month.

V.H.F. Group:

Meeting Night: Third Wednesday of month.

QSL Bureau:

J. Batchelor — VK7JB

Membership Fees:

City: Full Member — £1/15/0

Associate — £1/10/6

Country: Full Member — £1/10/0

Associate — £1/10/0

Student Members (Under 18 Years) — £1/5/0



WHAT'S BEHIND THIS LABEL?



AWV POWER VALVES

Today the power valve field in Australia is an ever expanding one, and for this reason the Amalgamated Wireless Valve Company maintains a power valve section that is probably the most up-to-date of its kind in Australia. The valves manufactured in this section cover applications as diversified as Aircraft communications and plastic welding, with new designs being constantly undertaken by the AWV design engineers. Realizing that precision operation requires more than ordinary reliability and performance the engineers at the Rydalmere factory combine the knowledge gained by over 29 years of valve manufacture with the latest local and overseas equipment to produce a range of power valves that stand as symbols of quality and dependability.

Additional features that account for the superiority of Super Radiotrons are strict quality control during manufacture and a rigid series of tests following completion, which all power valves must pass before being branded and packed ready for despatch.



BACKED BY TWENTY-NINE YEARS
OF ELECTRONIC EXPERIENCE

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.
SYDNEY — MELBOURNE — BRISBANE